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OFC. OF ENVIRONMENTAL
QUALITY CONTROL

January 25, 2018

Mr. Scott Glenn, Director
Office of Environmental Quality Control
Department of Health, State of Hawai'i
235 South Beretania Street, Room 702
Honolulu, Hawai'i 96813

**SUBJECT: Draft Environmental Assessment and Anticipated Finding of No Significant Impact
Water Plan 2020 Project No. PLH-35b
Kapaia Cane Haul Road 18" Main
Lihu'e Water System, Lihu'e, Kaua'i, Hawai'i**


Aloha Mr. Glenn:

With this letter, the County of Kaua'i Department of Water hereby transmits the draft environmental assessment and anticipated finding of no significant impact (DEA-AFNSI) for the Kapaia Cane Haul Road 18" Water Main project located at TMKs: (4) 3-8-018:001, (4) 3-8-018:002, roadways within plats (4) 3-8-015, (4) 3-8-007, and (4) 3-8-009 in the Lihu'e District on the island of Kaua'i for publication in the next available edition of the Environmental Notice.

Enclosed is a completed OEQC Publication Form, one copy of the DEA-AFONSI, a CD with an Adobe Acrobat PDF file of the same and an electronic copy of the publication form in MS Word.

Should you have any questions, please contact Mr. Bryan Wienand of my staff at (808) 245-5449 or email at bwienand@kauaiwater.org.

Sincerely,


Kirk Saiki, P.E.
Manager and Chief Engineer

BW/ce

Enclosures

18-307

AGENCY PUBLICATION FORM

Project Name:	Kapaia Cane Haul Road 18-inch Main
Project Short Name:	Kapaia Cane Haul Road Main
HRS §343-5 Trigger(s):	(1) Propose the use of state of county lands or the use of state or county funds
Island(s):	Kaua`i
Judicial District(s):	Lihu`e
TMK(s):	(4) 3-8-018:001, (4) 3-8-018:002, roadways within plats (4) 3-8-15, (4) 3-8-07 and (4) 3-8-09
Permit(s)/Approval(s):	Road Permit for work within County Right-of-Way (County of Kaua`i) National Pollutant Discharge Elimination System (NPDES) Permit (State of Hawai`i, Dept. of Health) Community Noise Permit (State of Hawai`i, Dept. of Health) Road Permit for work within State Right-of-Way (State of Hawai`i, Dept. of Transportation)
Proposing/Determining Agency:	County of Kaua`i, Department of Water
<i>Contact Name, Email, Telephone, Address</i>	Mr. Bryan Wienand, P.E., Deputy Manager-Engineer, bwienand@kauaiwater.org County of Kaua`i, Department of Water 4398 Pua Loke Street, Lihue, HI 96766 (808) 245-5449
Accepting Authority:	
<i>Contact Name, Email, Telephone, Address</i>	
Consultant:	Kodani & Associates Engineers, LLC
<i>Contact Name, Email, Telephone, Address</i>	Mr. William Eddy, P.E., Vice President, bill@kodani.com 3126 Akahi Street Lihue, HI 96766 (808) 245-9591

Status (select one) DEA-AFNSI**Submittal Requirements**

Submit 1) the proposing agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the DEA, and 4) a searchable PDF of the DEA; a 30-day comment period follows from the date of publication in the Notice.

 FEA-FONSI

Submit 1) the proposing agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEA, and 4) a searchable PDF of the FEA; no comment period follows from publication in the Notice.

 FEA-EISPN

Submit 1) the proposing agency notice of determination/transmittal letter on agency letterhead, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEA, and 4) a searchable PDF of the FEA; a 30-day comment period follows from the date of publication in the Notice.

 Act 172-12 EISPN
("Direct to EIS")

Submit 1) the proposing agency notice of determination letter on agency letterhead and 2) this completed OEQC publication form as a Word file; no EA is required and a 30-day comment period follows from the date of publication in the Notice.

 DEIS

Submit 1) a transmittal letter to the OEQC and to the accepting authority, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the DEIS, 4) a searchable PDF of the DEIS, and 5) a searchable PDF of the distribution list; a 45-day comment period follows from the date of publication in the Notice.

 FEIS

Submit 1) a transmittal letter to the OEQC and to the accepting authority, 2) this completed OEQC publication form as a Word file, 3) a hard copy of the FEIS, 4) a searchable PDF of the FEIS, and 5) a searchable PDF of the distribution list; no comment period follows from publication in the Notice.

- FEIS Acceptance Determination The accepting authority simultaneously transmits to both the OEQC and the proposing agency a letter of its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS; no comment period ensues upon publication in the Notice.
- FEIS Statutory Acceptance Timely statutory acceptance of the FEIS under Section 343-5(c), HRS, is not applicable to agency actions.
- Supplemental EIS Determination The accepting authority simultaneously transmits its notice to both the proposing agency and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is or is not required; no EA is required and no comment period ensues upon publication in the Notice.
- Withdrawal Identify the specific document(s) to withdraw and explain in the project summary section.
- Other Contact the OEQC if your action is not one of the above items.

Project Summary

The Department of Water, County of Kauai ("KDOW") proposes to construct an approximately 9,000 foot long, 18-inch diameter water transmission main ("Relief Line") beginning at the intersection of `Ehiku Street and Kūhiō Highway, crossing into private property and travelling along the Kapaia Cane Haul Road from Kūhiō Highway toward and ending at Mā`alo Road. The proposed Relief Line will connect to existing KDOW 16-inch diameter water transmission mains on each end. All components of the Relief Line, including materials and construction methods, will be in accordance with *Hawai'i Water System Standards*.

Most work will be constructed within previously paved surfaces and shoulders. Installation of the Relief Line will require trenching of the earth along the majority of the project length. The trenching will likely consist of excavating equipment digging a trench approximately 3 feet wide to depths ranging from approximately 4 feet to 6 feet. A contractor will typically open a segment of trench, and then install the pipe and backfill the trench within one working day. Typical lengths of pipe installation range from 60 feet to 180 feet in a single work day. The existing roadway pavement will be restored after the new pipe has been installed and tested.

Kapaia Cane Haul Road 18-inch Main Draft Environmental Assessment

Submitted Pursuant to Hawai'i Revised Statutes Chapter 343

Proposing Agency:

County of Kaua'i
Department of Water
4398 Pua Loke Street
Līhu'e, HI 96766

Accepting Agency:

County of Kaua'i
Department of Water
4398 Pua Loke Street
Līhu'e, HI 96766

Prepared by:

Kodani & Associates Engineers, LLC
3126 Akahi Street
Līhu'e, HI 96766

January 26, 2018

Table 1 - Summary of Project

Project Name:	Kapaia Cane Haul Road 18-Inch Main
Applicant:	County of Kaua`i Department of Water 4398 Pua Loke Street Līhu`e, HI 96766 Contact: Mr. Bryan Wienand, P.E., Deputy Manager-Engineer
Property Owners:	Grove Farm Company, Inc. 3-1850 Kaumuali`i Highway Līhu`e, HI 96766 Contact: Ms. Shawn Shimabukuro <u>and</u> County of Kaua`i Department of Public Works 4444 Rice Street, Suite 275 Līhu`e, HI 96766 Contact: Mr. Lyle Tabata, Acting County Engineer <u>and</u> State of Hawai`i Department of Transportation, Highways Division 1720 Haleukana Street Līhu`e, HI 96766 Contact: Mr. Larry Dill, P.E., District Engineer
Accepting Agency:	County of Kaua`i Department of Water 4398 Pua Loke Street Līhu`e, HI 96766 Contact: Mr. Bryan Wienand, P.E., Deputy Manager-Engineer
Locations:	<ul style="list-style-type: none"> • `Ehiku Street and Kūhiō Highway intersection in Līhu`e • `Ehiku Street • Kapaia Cane Haul Road (located between the `Ehiku Street and Mā`alo Road) • Kapaia Cane Haul Road intersection with Mā`alo Road
TMKs:	<ul style="list-style-type: none"> • (4) 3-8-018:001 • (4) 3-8-018:002 • `Ehiku Street and Kūhiō Highway, plats (4) 3-8-15, (4) 3-8-07 and (4) 3-8-09

Proposed Action:	Construct an 18-inch water transmission relief line, consistent with the Department of Water, Water Plan 2020 <ul style="list-style-type: none"> • Approximately 7,525 feet along Kapaia Cane Haul Road; and • Approximately 1,475 feet along `Ehiku Street to Kūhiō Highway • Total length of transmission line: approximately 9,000 feet
and area:	Approximately 1.0 acre
State Land Use District:	Agricultural District & Urban District
Kaua`i General Plan:	Agriculture & Residential Community
Kaua`i County Zoning:	Agriculture District (A), Open (O) & Residential (various density)
Possible Permits Required:	County of Kaua`i: <ul style="list-style-type: none"> • Public Works: Road Permit for work within County Right-of-Way State of Hawai`i: <ul style="list-style-type: none"> • Department of Health: NPDES and Community Noise Permit • Department of Transportation (Highways Division): Road Permit for work within Kūhiō Highway Right- of-Way
Anticipated Determination:	Finding of No Significant Impact (FONSI)

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EXHIBIT B	Relief Line & Alternate #1 Location Map, USGS Quadrangle Map (Base Map)
EXHIBIT C	Map of Current Land Use
EXHIBIT D	Relief Line Location Map, State Land Use Map (Base Map)
EXHIBIT E	Relief Line Location Map, County General Plan Map (Base Map)
EXHIBIT F	Relief Line Location Map, County Zoning Map (Base Map)
EXHIBIT G	Relief Line Location Map, Tax Map Key Map (Base Map), TMK Plat (4) 3-8-018
EXHIBIT H	Map from County of Kaua`i, Department of Water, <i>Proposed Capital Improvement Projects</i> ⁶ , Project PLH-35b, Kapaia Cane Haul Road 18-inch Main
EXHIBIT I	Līhu`e Planning District, Heritage Resources Map, County of Kaua`i, <i>Kaua`i General Plan</i> ⁸
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EXHIBIT K	Statewide Critical Habitat – All Species Merged, December 2016, State of Hawai`i, Office of Planning, Hawai`i Statewide GIS Program
EXHIBIT L	Flood Hazard Map TMK (4) 3-8-018:001
EXHIBIT M	Flood Hazard Map TMK (4) 3-8-018:002

- EXHIBIT N Figure 3-16: Island of Kaua`i Ground-Water Hydrologic Units, State of Hawai`i, *Water Resource Protection Plan*²⁷, June 2008
- EXHIBIT O Figure 3-22: Island of Kaua`i Surface-Water Hydrologic Units, State of Hawai`i, *Water Resource Protection Plan*²⁵, June 2008
- EXHIBIT P Island of Kaua`i Registered Diversions, Table 3-21: Inventory of Surface Water Resources, State of Hawai`i, *Water Resource Protection Plan*²⁵, June 2008

LIST OF APPENDICES

- Appendix A Photo Log of Project Area
- Appendix B Pre-Consultation Response Correspondence
- Appendix C Archaeological, Historical and Cultural Impact Assessment

1. STATEMENT

This Environmental Assessment has been prepared pursuant to the following statutes, rules and publications:

- State of Hawai`i, *Hawai`i Revised Statutes, Chapter 343, Environmental Impact Statements*¹
- State of Hawai`i, *Hawai`i Administrative Rules, Title 11, Department of Health, Chapter 200, Environmental Impact Statement Rules*²
- State of Hawai`i, Office of Environmental Quality Control, *Guide to the Implementation and Practice of the Hawai`i Environmental Policy Act*³

2. PROPOSED PROJECT

2.1 Description and Technical Characteristics

The Department of Water, County of Kauai (“KDOW”) proposes to construct an approximately 9,000 foot long, 18-inch diameter water transmission main (“Relief Line”) beginning at the intersection of `Ehiku Street and Kūhiō Highway, crossing into private property and travelling along the Kapaia Cane Haul Road from Kūhiō Highway toward and ending at Mā`alo Road. The proposed Relief Line will connect to existing KDOW 16-inch diameter water transmission mains on each end.

The proposed Relief Line will be 18-inch diameter and the proposed material for the transmission main is Class 52 ductile iron pipe. A relatively small portion of the project consists of copper and stainless steel for various water system appurtenances. All components, including materials and construction methods, of the Relief Line will be in accordance with State of Hawai`i Water System Standards¹³. KDOW currently has transmission lines within the Līhu`e system that range from 12-inch to 24-inch in diameter. The proposed Relief Line will connect on each end to existing KDOW 16-inch diameter water mains, effectively creating a “loop” in the water system which provides redundancy.

The proposed Relief Line will alleviate the capacity limitation caused by the inadequate segment of water transmission main on Kūhiō Highway between Kapaia Bridge and Wilcox Medical Center. Fire flow capacity will also improve as a result of the Relief

Line. Furthermore, the redundancy will allow KDOW to maintain water service to customers in the event of problems with other transmission mains in the area, which especially benefits KDOW's critical customers such as the Wilcox Medical Center and Wilcox Elementary School. Overall, the proposed Relief Line will improve the efficiency, redundancy, and stability of the Līhu`e system.

Most work will be constructed within previously paved road surfaces and shoulders. Installation of the proposed Relief Line will require trenching of the earth along the majority of the project length. The trenching will likely consist of excavating equipment digging a trench approximately 3 feet wide to depths ranging from approximately 4 feet to 6 feet. A contractor will typically open a segment of trench, and then install the pipe and backfill the trench within one working day. Typical lengths of pipe installation range from 60 feet to 180 feet in a single work day. The existing roadway pavement will be restored after the new transmission pipe has been installed and tested.

Exhibits A-P depict the project site overlaid on various base maps. **Appendix A** contains a photo log of the project site for reference.

2.2 Purpose and Need

In 1994, Amfac/JMB Hawaii, Inc.'s Līhu`e-Hanamā`ulu Master Planned Community ("Līhu`e Development Plan") proposal received State Land Use Commission approval. Grove Farm Company, Inc. ("Grove Farm"), as the successor in interest to Amfac/JMB Hawaii, Inc., is required to participate in the funding and development of water source, storage, and transmission facilities for the Lihue Development Plan.

In 2009, Kodani & Associates Engineers, LLC prepared the *Līhu`e-Hanamā`ulu Master Planned Community Water Master Plan*⁵ ("Water Master Plan") to address the water requirements of the Līhu`e Development Plan according to the KDOW Water System Standards and Rules and Regulations.

The Līhu`e Development Plan will be served by KDOW's Puhī-Līhu`e-Hanamā`ulu-Kapa`a Water System ("Līhu`e system") (see Exhibit A). The Līhu`e system is a public water system, PWS No. 400, regulated by the State of Hawai`i, Department of Health. The Līhu`e system services residential, commercial, industrial, public, and resort uses, including Kapaia. KDOW consumers in the Līhu`e system are serviced from both groundwater and surface water sources including multiple groundwater wells and the Waiahi Surface Water Treatment Plant ("Waiahi SWTP"). No additional source or storage is required for this project.

The Waiahi SWTP is a major source of potable water for the Līhu`e system. The current capacity of the Waiahi SWTP is 3.0 million gallons per day (MGD) in accordance with various governmental regulations and approvals. The capacity of the Waiahi SWTP will not increase due to the installation of the proposed Relief Line.

Transmission mains from KDOW tanks to the various service areas range in size from 12-inch to 24-inch diameters. KDOW standards require residual pressure of 20 pounds per square inch (PSI) at critical fire hydrants under maximum day demand conditions, 40 PSI at peak hour flow, 6 feet per second (FPS) maximum velocity, and 125 PSI maximum static or dynamic pressure.

Based on the combined flow rate from the current 3.0 MGD capacity of the Waiahi SWTP and the KDOW wells located along Mā`alo road, KDOW determined that the 12-inch main on Kūhiō Highway from Mā`alo Road to the Wilcox Medical Center area is not adequate to transmit the current source water without exceeding the 6 FPS max flow rate allowed by Hawai`i Water System Standards (“WSS”). The proposed Relief Line is necessary to meet WSS standards (6 FPS max flow criteria) with current sources on Mā`alo Road.

The Water Master Plan identified a decrease in system pressures and flows as a result of the Lihue Development Plan unless transmission and distribution improvements were provided. Hydraulic modeling showed that the pressure at the Mā`alo Road and Kūhiō Highway intersection, 102’ elevation, exceeded the 125 psi maximum under average day demands. As a result of the excess pressure, elevation, and velocity restrictions, the current transmission line capacity is deemed inadequate⁵. The proposed Relief Line is necessary to address this capacity limitation.

The proposed Relief Line will improve the overall water system transmission capability by transmitting water from Waiahi SWTP, Pukaki well, and Hanamā`ulu Wells 3 and 4 sources, which are the existing sources on Mā`alo Road, directly to the central Līhu`e area. It will also improve the system’s reliability because it creates transmission redundancy from the existing sources on Mā`alo Road to central Līhu`e which has the greatest demand in the system.

KDOW is currently preparing a *Water Use and Development Plan*⁷ (“KWUDP”) as mandated by the State of Hawai`i. The KWUDP is a component of the Hawai`i Water Plan which serves as a dynamic, long-range planning guide for the Commission on Water Resource Management. Key goals of the KWUDP are to provide guidance for the island’s water resource managers, ensuring that future water needs of the county are met while preserving the integrity of the island’s water resources. It is also to provide

guidance to ensure that sustainable water resources are integrated into the county's formulation and development of land use policies.

2.3 Location

The proposed Relief Line is contained within an approximate one (1) acre of land partially within the Līhu'e town area and partially in the agricultural area mauka of Līhu'e. **Exhibit A** illustrates the project area superimposed on a map reproduced from KDOW's *Water Quality Report Līhu'e Kapa'a Water System 2016*²³. **Exhibits A – P** provide illustrations of the project area superimposed on various base maps.

The proposed Relief Line alignment will begin at Kūhiō Highway at the intersection with `Ehiku Street where it will connect to an existing KDOW 16-inch diameter water main. Traveling from the Kūhiō / `Ehiku intersection in the western direction, the project will be constructed primarily under the pavement of `Ehiku Street to the end of `Ehiku Street. See **Appendix A** for a photo log of the project area.

The proposed Relief Line alignment then continues on to the privately owned Kapaia Cane Haul Road in the northerly direction. There is an existing normally closed access gate at the `Ehiku Street and Kapaia Cane Haul Road juncture. Kapaia Cane Haul Road is an existing asphalt road and the majority of the project will be constructed under the existing pavement.

The proposed Relief Line will then terminate at the Kapaia Cane Haul Road and Mā`alo Road intersection where it will connect to an existing KDOW 16-inch water main. There is an existing normally closed access gate on the Kapaia Cane Haul Road at an intermediate point in between `Ehiku Street and Mā`alo Road. Grove Farm privately owns both Kapaia Cane Haul Road and Mā`alo Road at the Kapaia Cane Haul Road and Mā`alo Road intersection.

The overall length of the proposed Relief Line is approximately 9,000 feet and is proposed to be constructed within four (4) areas:

- Kūhiō Highway intersection with `Ehiku Street
- County of Kaua'i's `Ehiku Street to beginning of Kapaia Cane Haul Road
- Along the Kapaia Cane Haul Road within the 6,081 acre and 867 acre Grove Farm parcels respectively on Tax Map Keys (4) 3-8-018:001 and (4) 3-8-018:002
- Kapaia Cane Haul Road intersection with Mā`alo Road

2.4 Current Land Use, Land Use Classification, General Plan, and Zoning

The Relief Line will be within the existing Kūhiō Highway, `Ehiku Road, Kapaia Cane Haul Road and Mā`alo Road as describe above. The current land use along the proposed Relief Line alignment varies from commercial and residential along the public corridors to agricultural and commercial uses along the private road corridor. **Exhibit C** provides a map of the current land uses surrounding the project alignment.

A summary of the applicable land use zone classifications is provided below in Table 2:

Table 2 - Land Use Zone Classifications

	TMK (4) 3-8-018:001	TMK (4) 3-8-018:002
State Land Use District:	<i>Agricultural District</i>	<i>Agricultural District & Urban District</i>
Kaua`i County General Plan:	<i>Agriculture</i>	<i>Agriculture</i>
Kaua`i County Zoning:	<i>Agriculture District (A) & Open (O)</i>	<i>Agriculture District (A) & Open (O)</i>

The existing State Land Use District classifications for the TMKs within the project areas are *Agricultural*, and in TMK (4)3-8-018:002 a small portion is classified as *Urban District*. These classifications are shown in **Exhibit D**. The `Ehiku Street and Kūhiō Highway segments are located in the Urban District.

The current County of Kaua`i General Plan land use designation for the project areas within the privately owned parcels is *Agriculture*, as shown on the County General Plan map in **Exhibit E**. General Plan land use designation for the project areas within `Ehiku Street and Kūhiō Highway are *Residential Community*.

The County Zoning for the Grove Farm owned parcels is *Agriculture District (A)* and *Open (O)*, and is shown in **Exhibit F**. `Ehiku Street and Kūhiō Highway do not have any County Zoning.

The proposed Relief Line area is outside the Special Management Area, and not within the Shoreline Setback area.

2.5 Possible Permits Required and Approvals

State of Hawai`i, Department of Transportation, Highways Division

The State of Hawai`i, Department of Transportation, Highways Division indicated during the pre-consultation that a Permit to Perform Work Within the State Right of Way will be

required for the segment of the Relief Line within the State Highway Right of Way (intersection of Kūhiō Highway and `Ehiku Street). A Use and Occupancy Agreement is required for the installation, occupancy, and maintenance of the KDOW's water main and appurtenances.

Hawai`i Administrative Rules, Title 11, Department of Health, Chapter 46, Community Noise Control¹⁴

It is anticipated that the portion of construction work within Kūhiō Highway will have to be conducted during the late nighttime hours to minimize traffic impacts. A Noise Variance Permit will be required in order to conduct night work. Should a Community Noise Control permit be required, the Relief Line contractor would submit an application to conduct construction activities within the Relief Line area.

National Pollutant Discharge Elimination System (NPDES) Permit

An NPDES¹⁰ permit is required to construct the proposed Relief Line and a Notice of General Permit Coverage (NPGC) has been obtained.

The State of Hawai`i, Department of Health, Clean Water Branch has regulatory jurisdiction over NPDES permitting. Hawai`i Administrative Rules, Chapter 11-54, Water Quality Standards¹¹, is the applicable regulation.

Basic water quality criteria (comply with Hawai`i Administrative Rules, Chapter 11-54, Section 11-54-04)

a. The Permittee shall not cause or contribute to a violation of the narrative basic water quality criteria specified in Section 11-54-04(a) which states:

- “(a) All waters shall be free of substances attributable to domestic, industrial, or other controllable sources of pollutants, including:*
- 1) Materials that will settle to form objectionable sludge or bottom deposits;*
 - 2) Floating debris, oil, grease, scum, or other floating materials;*
 - 3) Substances in amounts sufficient to produce taste in the water or detectable off-flavor in the flesh of fish, or in amounts sufficient to produce objectionable color, turbidity, or other conditions in the receiving waters;*
 - 4) High or low temperatures; biocides; pathogenic organisms; toxic, radioactive, corrosive, or other deleterious substances at levels or*

in combinations sufficient to be toxic or harmful to human, animal, plant, or aquatic life, or in amounts sufficient to interfere with any beneficial use of the water;

- 5) *Substances or conditions or combinations thereof in concentrations which produce undesirable aquatic life;*
- 6) *Soil particles resulting from erosion on land involved in earthwork, such as the construction of public works; highways; subdivisions; recreational, commercial, or industrial developments; or the cultivation and management of agricultural lands”*

b. The Permittee shall not cause or contribute to a violation of the basic numeric water quality requirements of Hawai`i Administrative rules, Chapter 11-54, Section 11-54-04(b).

County of Kaua`i, Planning Department

The *Kaua`i General Plan*⁸ is administered by the County of Kaua`i Planning Department. The current *Kaua`i General Plan* was approved by ordinance on November 30, 2000. The Planning Department administers zoning permits with consideration to the General Plan. The permitting requirements for the Relief Line are described below.

A consultation meeting was held with a representative of the Planning Department to seek advice and input on the proposed Relief Line (see Chapter 8, Consultation). The below is a discussion of zoning permits.

Utility lines are considered accessory uses to private and public utility installations and facilities. According to the Comprehensive Zoning Ordinance⁹, Table 8-2.4, such accessory uses are permitted in both the Agriculture and Open County Zoning. Moreover, a Planning Department Special Permit will not be required for the Relief Line as the two parcels are within the State Land Use *Agricultural District* and greater than 15 acres

§205-4.5 Permissible uses within the agricultural districts. (a) *Within the agricultural district, all lands with soil classified by the land study bureau’s detailed land classification as overall (master) productivity rating class A or B shall be restricted to the following permitted uses:*

.....

- (7) *Public, private, and quasi-public utility lines and roadways, transformer stations, communications equipment buildings, solid waste transfer stations, major water storage tanks, and appurtenant small buildings such as booster pumping stations, but not including offices or*

yards for equipment, material, vehicle storage, repair or maintenance, treatment plants, corporation yards, or other similar structures.

County of Kaua`i, Department of Public Works

A Department of Public Works Road Permit will be required for the construction of the proposed Relief Line within the County Right-of-Way on `Ehiku Street.

2.6 Approximate Cost and Project Schedule

The total estimated construction cost the proposed Relief Line is \$3,000,000. As noted, Grove Farm is required to participate in the funding and development of transmission facilities for the Līhu`e Development Plan. Accordingly, funding of approximately two-thirds is allocable to KDOW and one-third is allocable to Grove Farm/Waiahi Water Co.

The proposed Relief Line design is scheduled to be completed in March 2018 and is tentatively scheduled to break ground mid-2018. The proposed Relief Line is anticipated to take approximately nine (9) months to complete once construction begins.

2.7 Environmental Review Trigger

This environmental assessment is pursuant to Chapter 343 of the Hawai`i Revised Statutes (“HRS”) and Title 11, Chapter 200, of the Hawai`i Administrative Rules (“HAR”). Under the Hawai`i Revised Statutes, Section 343-5(a), an environmental assessment is required as a portion of County lands and a portion of County funds will be used for the proposed Relief Line.

Part 7 of this document states the anticipated finding that no significant impacts are expected to occur; Part 7 lists each criterion and presents the preliminary findings for each made by KDOW, the proposing and determining agency. If, after considering comments to this environmental assessment, KDOW concludes that, as anticipated, no significant impacts would be expected to occur, then KDOW will issue a Finding of No Significant Impact (FONSI), and the proposed action will be permitted to proceed. If KDOW concludes that significant impacts are expected to occur as a result of the proposed action, then an Environmental Impact Statement will be prepared.

3. PUBLIC FACILITIES AND SERVICES

3.1 Water

KDOW operates nine (9) water systems island wide, see **Exhibit A**. The proposed Relief Line is within the Līhu`e system which has the largest number of services. The proposed Relief Line will improve the existing system in this service area by removing the current capacity limitation. The proposed Relief Line will have the added benefit of being sized to provide for future transmission needs.

The existing sources on Mā`alo Road include both groundwater and surface water sources. There are two (2) existing water storage facilities mauka of the proposed Relief Line. The Relief Line will not cause any changes to the existing water source or storage facilities nor will it cause any changes in the operation of such facilities. The benefits of the Relief Line are associated with the improvement in transmission capacity.

No significant impacts to groundwater are anticipated during construction and operation of the proposed Relief Line.

3.2 Fire, Police, and Kaua`i Emergency Management

The County of Kaua`i Līhu`e Fire Station on Rice Street, is less than two (2) miles from the entrance to the proposed Relief Line area. The Fire Department's Fire/Rescue/Hazmat/Medical Response Operations program provides fire protection and suppression, rescue (ocean and land), hazmat and emergency medical services. The proposed Relief Line will add transmission redundancy and improve the fire flow capacity of the Līhu`e system. The Fire Department was consulted during the drafting of this Environmental Assessment; see Chapter 8, Consultation.

The Kaua`i Police Department main station and administrative headquarters and the Kaua`i Emergency Management ("KEMA") headquarters are located on Ka`ana Street, near Kāpule Highway in Līhu`e. The Police Department and KEMA headquarters are less than two (2) miles from the project area location..

3.3 Medical Facilities

Wilcox Medical Center and the Kūhiō Medical Clinic are situated on Kūhiō Highway, less than one mile from the proposed Relief Line area. Wilcox Medical Center is the largest medical center on Kaua`i, it is a state-of-the-art acute care facility with a full suite of services offering 30 specialties and programs including cardiology, emergency, family practice, gastroenterology, health management, internal medicine, neurology, OB-GYN, oncology, orthopedics, pediatrics and urology. Its 20-bed emergency department is the first neighbor island facility to obtain a Level III Trauma designation and serves as the island's Primary Stroke Center. The medical center also has four birthing suites, seven intensive care beds and 20 same-day surgery beds. Kūhiō Medical Center is the first

NCQA Recognized Patient-Centered Medical Home in Hawaii with a focus to emphasize the use of systematic, patient-centered, coordinated care that supports access, communication and patient involvement.

The proposed Relief Line will add redundancy and improve the fire flow capacity to the benefit of both medical facilities. Consultation with Wilcox Medical Center was conducted during the drafting of this Environmental Assessment; see Chapter 8, Consultation and Appendix B.

3.4 Wastewater

The portion of the proposed Relief Line within the County's Agriculture zoned area does not have any public wastewater collections and disposal systems. The project area on `Ehiku Street and Kūhiō Highway is serviced by the County of Kaua`i, Department of Public Works, Wastewater Management Division. Consultation with Wastewater Management Division was conducted during the engineering design portion of this project; see Chapter 8, Consultation.

3.5 Other Public Facilities

The Department of Education's Kaua`i complex includes the Elsie H. Wilcox Elementary School, the King Kaumuali`i Elementary School, Chiefess Kamakahelei Middle School and Kaua`i High School, which are located within the general area of the proposed Relief Line area. The Līhu`e Public Library is also within the Līhu`e Town Center area. The proposed Relief Line will add redundancy and improve the fire flow capacity to the benefit of the Department of Education's facilities.

3.6 KDOW customers

To connect the proposed Relief Line to the existing 16-inch water main in Kūhiō Highway at the intersection with Ehiku Street, a nighttime water service shutdown will occur. The shutdown is anticipated to affect customers along Kūhiō Highway, from the north side of the intersection of Kūhiō Highway and Ahukini Road to the empty lot between Wal Mart and Wilcox Hospital. The KDOW does not anticipate that water service to Wal Mart and Wilcox Hospital will be affected during the shutdown.

KDOW will provide notice to the affected customers prior to the shutdown along with recommendations for steps to take prior to the shutdown. For example, KDOW affected customers are advised to:

- Store enough water to meet your needs during the shutdown.

- Those with faulty water heaters should ensure that water heaters do not empty during the shutdown.
- Notify family, friends and neighbors that may be affected by the shutdown.
- After the water main is turned back on, air and or existing sediment may be mixed into the water causing it to appear white or discolored. This is normal, and if it occurs, customers may flush water out through an outside hose bib until the water is clear.
- To monitor updates online, visit www.facebook.com/KauaiDOW.

Potential Impacts and Mitigative Measures

The operation of and access to all public facilities and services and KDOW customers along Kūhiō Highway are not anticipated to be adversely affected by the temporary construction work or the long-term operation of the proposed Relief Line.

Public facilities and services and KDOW customers along Kūhiō Highway may be temporarily impacted during the operation to connect the proposed Relief Line to the existing 16-inch water main on Kūhiō Highway. KDOW will coordinate the service connection with potentially impacted public facilities and services and KDOW customers. Such coordination may include scheduling the connection operation during nights and/or weekends to minimize impacts.

Public facilities and services and KDOW customers are expected to receive beneficial long-term impacts as a result of the proposed Relief Line, including improved reliability as a result of redundancy, more stable water pressure, and better fire flow capacity. No long-term mitigative measures are proposed.

3.7 Utilities: Electrical, Telephone, and Cable

Kaua`i Island Utility Company (“KIUC”), Hawaiian Telcom, and Oceanic Cable have been consulted during the engineering design portion of this project; see Chapter 8, Consultation.

The proposed Relief Line will not directly require electrical, telephone or cable service in order to operate and no such utility service connections are anticipated for the proposed Relief Line. Electrical power, telephone and cable services are currently not available along the Kapaia Cane Haul Road. Utility services are available on `Ehiku Street, Mā`alo Road and Kūhiō Highway by way of overhead lines.

Existing underground utilities in the Kūhiō Highway / `Ehiku Street intersection have been identified through consultation with the respective utilities. Engineering design of

the proposed Relief Line includes field locating of the underground utility lines. The *Hawai`i Water System Standards*¹³, requires that new waterlines meet horizontal and vertical clearances from other utilities. The proposed Relief Line will be designed to meet the standards.

KIUC owns and operates an electrical generating power plant that is situated along the Kapaia Cane Haul Road; see **Exhibit B**. Electrical transmission lines originating from the power plant are present along the Kapaia Cane Haul Road corridor.

Potential Impacts and Mitigative Measures

The proposed Relief Line has no long-term effect on electric, telephone or cable utilities and no long-term mitigative measures are recommended.

There is the possibility of temporary impacts on utilities during construction due to waterline trenching operations encountering unanticipated and un-marked utilities. Mitigation measures to prevent the accidental severing of utility lines include careful engineering design as well as the requirement that the construction contractor follow the mandatory "Call Before You Dig" program as administered by the Hawai`i Utility Notification Center.

3.8 Roadways and Traffic

The project area begins at the intersection of Kūhiō Highway and `Ehiku Street, where the proposed Relief Line will connect with KDOW's existing 16-inch diameter main. This intersection is under the jurisdiction of the State of Hawai`i, Department of Transportation, Highways Division, and has a substantial amount of traffic during peak hours of the day. Kūhiō Highway (at the intersection) has a 60-foot Right-of-Way with two (2) lanes of traffic in each direction.

`Ehiku Street (within the project area) is a County of Kaua`i road, under the jurisdiction of the Department of Public Works. It has a 50-foot Right-of-Way and the pavement width varies from approximately 28 feet to 42 feet. There is one lane of traffic in each direction.

Grove Farm privately owns the Kapaia Cane Haul Road (Cane Haul Road). The pavement width varies from approximately 25 feet to 35 feet. An easement will be provided in favor of the KDOW for the proposed Relief Line.

Grove Farm also privately owns the section of Mā`alo road contained in the project area. This section is in between two (2) sections of Mā`alo Road owned by the State of Hawai`i. It has an approximate 20-foot pavement width.

A Traffic and Roadways Engineering Feasibility Study¹⁴ (TREFS) was performed as part of the County of Kaua`i proposed new landfill Environmental Impact Statement. The intersection of Kūhiō Highway and `Ehiku Street was studied as part of this report. The intersection is controlled by a traffic signal. It was determined that the intersection's Level of Service (LOS), a qualitative description of the performance of an intersection based on average delay per vehicle, received a grade of "A" for both Weekday AM and Weekday PM peak hours. This grade means that the average control vehicle delay was less than 10 seconds. `Ehiku Street is listed as one of the proposed routes for the New Kaua`i Landfill and Resource Recovery Park, but is not one of the preferred routes (as determined by the TREFS report).

The Department of Transportation, Highways Division and County of Kaua`i Department of Public Works have been consulted in regards to roadways and traffic during the development of this draft environmental assessment and also during engineering design portion of this project; see Chapter 8, Consultation.

Potential Impacts and Mitigative Measures

The proposed Relief Line will have a short-term impact on traffic in the Kūhiō Highway and `Ehiku Street intersection, as well as along `Ehiku Street. Work in the intersection of Kūhiō Highway and `Ehiku Street will be limited to the times permitted by the State of Hawai`i Department of Transportation to reduce the project's impact on traffic in the area. A detailed Traffic Control Plan for the Kūhiō Highway/`Ehiku Street intersection will be included in the project construction plans to mitigate any potential impacts on traffic. The plan will be reviewed by the Department of Transportation and in accordance with their requirements.

Work along `Ehiku Street will be limited to the times permitted by the County of Kaua`i Department of Public Works. Included in the construction plans are Traffic Control Plans that aim to mitigate traffic impacts in the intersection and along `Ehiku Street. The Traffic Control Plans identify existing traffic direction and signs adjacent to the project area, as well as plans for traffic control during construction in the project area. The Traffic Control Plan will be in accordance with the Department of Public Works requirements.

A Traffic Control Plan for the Kapaia Cane Haul Road is not needed because it is not accessible to the public. A Traffic Control Plan for Mā`alo Road is included in the construction plans.

The proposed Relief Line is not expected to have any long-term effects on traffic on any of the existing roads within the project area.

4. SOCIO-ECONOMIC CHARACTERISTICS

4.1 Demographics of Affected Community

According to the 2010 Census, the Kaua`i population was 67,091 residents. The 2010 Census data population for the Līhu`e area was 6,455¹⁵. Other relevant data is listed below in Table 3:

Table 3 - Demographic Data

Description	Census Tract 405
Population: Līhu`e	6,455
Number of Households	2,196
Median Household Income	\$67,448
Per Capita Income (2013)	\$27,815

In the 2010 census, the predominant ethnic groups within the Līhu`e area were, approximately, Asian (44.4%), Two or More Races (24.8%), White (22.2%), and Native Hawaiian and other Pacific Islanders (7.0%).

The February 2014 *Kaua`i General Plan Update: Socioeconomic Analysis and Forecasts*¹⁶ projects the Kaua`i population growth on Kaua`i to 88,013 in 2035. This is expected to increase the demand for water by Kaua`i residents, businesses, and visitors.

Potential Impacts and Mitigative Measures

The proposed Relief Line will not impact the demographics of the Līhu`e community. The *Kaua`i General Plan*¹⁰ provides the planning framework for development in the County of Kaua`i and the proposed Relief Line is in conformance with the *Kaua`i General Plan*¹⁰. No mitigative measures are proposed since there are no anticipated impacts.

4.2 Historic, Cultural, and Archaeological Resources

KDOW is obligated to protect the reasonable exercise of customarily and traditionally exercised rights of Native Hawaiians to the extent feasible. This affirmative obligation is set forth in the Hawai'i State Constitution (Article XII, Section 7), State Laws (Hawai'i Revised Statutes Sections 1-1 and 7-1), and judicial precedent. Likewise the Hawai'i State Legislature through the enactment of Act 50, 2000 Haw. Sess. Laws, clarified that the preparation of an environmental assessment should identify and address effects of the proposed project on Hawai'i's culture, and traditional and customary rights.

The proposed project is the installation of an approximately 9,000 foot long 18-inch diameter water transmission main along the existing `Ehiku Street and Kapaia Cane Haul Road (privately owned) from Kūhiō Highway to Mā`alo Road. The 18-inch main will connect to KDOW's 16-inch diameter water mains on each end. The purpose of the project is to address, (1) the hydraulically inadequate segment of the Kaua'i Board of Water Supply water transmission line on Kūhiō Highway between Kapaia Bridge and Wilcox Medical Center and (2) the need to improve fire flow capacity in the Līhu`e system. The subject alignment along the privately owned Kapaia Cane Haul Road was determined to be the preferred alternative because the private road had relatively low vehicular traffic flows and it will minimize traffic disruption to the public. It will also provide redundancy and reliability to the KDOW water system.

Ku`iwalu Consulting with the assistance of the archaeological consultant, Scientific Consultant Services, Inc. (SCS) prepared the Archaeological, Historical, and Cultural Impact Assessments (CIA) as part of the draft environmental assessment for the proposed Relief Line. The purpose of the CIA was to gather sufficient information to assist KDOW in applying the *Ka Pa`akai O Ka `Āina v. Land Use Commission*, 94 Hawai'i 31, 7 P.3d 1068 (2000) (*Ka Pa`akai*) analytical framework to ensure the protection and preservation of valued cultural, historical, and natural resources, including customarily and traditionally exercised rights of Native Hawaiians.

In this case, the process to gather the relevant information included, (1) site visit of the project area of Kapaia Cane Haul Road and relevant areas within the Hanamā`ulu Ahupua`a, (2) exhaustive archival research of mo`olelo or stories of the place, historic maps, relevant archaeological and cultural resource reports within the Hanamā`ulu Ahupua`a and specifically within the vicinity of Kapaia Cane Haul Road, (3) consultation with the State Historic Preservation Division (SHPD), (4) distribution of over 25 cultural consultation letters requesting relevant information of which at least 19 individuals responded with relevant information, and (5) several small group and individual talk story sessions with those who have cultural or lineal connection to the Hanamā`ulu Ahupua`a, specifically Kapaia, and cultural practitioners.

Based upon the above process, the CIA addresses the *Ka Pa`akai* analytical framework as follows:

- (1) The identity and scope of valued cultural, historical, or natural resources that are found within the proposed project area, including the extent to which traditional and customary Native Hawaiian rights are exercised.**

Upon a thorough review of the archival research, previous archaeological studies, site inspection, and numerous written and oral cultural consultations, we were unable to document any cultural or natural resources within the proposed project area. The large amount of kula lands and the intense use of the land for sugar cultivation in Hanamā‘ulu may explain the absence of traditional Hawaiian resources. The pattern of plantation land use, i.e., is generally plowing and tilling the soil to at least 36-42 inches, rock removal, etc. destroyed any evidence of pre-contact land use. However, it is more likely that with over 150 years of continuous sugarcane cultivation, which may have impacted access by native Hawaiians, that there is at this time, no documentation or evidence of valued cultural and natural resources in the area. Further, the cultural consultations also consistently affirmed that there are no trails, paths, gathering of resources, or burials within the project area.

However, the Kapaia Cane Haul Road is a historically significant resource. The cane haul road changed the traditional plantation community from isolated ethnic camps to a modern integrated community. In 1960, Līhu`e Plantation transitioned hauling cane from railroad cars to big trucks on the cane haul road. With the use of the Kapaia Cane Haul Road, the plantation workers from the ditch workers, irrigators, to the sugarcane workers left the plantation camps to purchase homes and cars in the towns which provided them access to educational, economic, recreational, and political opportunities that were not available within the plantation camps.

In addition to the Kapaia Cane Haul Road, there are several historic operating plantation ditches and culverts that are still in existence and being maintained and used by Grove Farm and their leased tenants for agricultural purposes. These features are over fifty years old and are examples of the historic plantation era.

(2) The extent to which those resources – including traditional and customary Native Hawaiian rights – will be affected or impaired by the proposed action.

In this case, while we could not identify any valued cultural or natural resources within the proposed area, we are of the view that the Kapaia Cane Haul Road and the plantation era irrigation features are significant historic resources. The proposed project does not intend to adversely impact or alter the Kapaia Cane Haul Road as it is a functioning access road for Grove Farm, its sub-lessees, and agencies who use the road for access. In addition, the proposed project will not adversely impact the architectural integrity of the historic irrigation features because rather than excavate under them (and potentially jeopardize the functional use of the resource), the proposed construction will be to adjust the vertical profile of the Relief line to provide vertical clearance above the historic irrigation features within the shoulder of the Kapaia Cane Haul Road when they encounter the irrigation features.

Potential Impacts and Mitigation Measures

The 3rd step of the *Ka Pa`akai* analytical framework, addresses the following:

(3) The feasible action, if any, to be taken by the agency to reasonably protect Native Hawaiian rights if they are found to exist.

In this case, while the CIA has not identified any traditional and customary Native Hawaiian rights or practices that would be impaired by the proposed action, we recommend the following mitigation measures should be adopted to avoid potential impacts to historic resources within the proposed project area:

1. In light of the recent Archaeological Inventory Survey (AIS) for the Solar City and Archaeological Assessment (AA) for the Adult Drug Treatment Facility that found no evidence of traditional subsurface resources, we would recommend no subsurface testing (i.e., AIS) be required for this project nor the requirement of archaeological monitoring along the portion of the project alignment that stretches from the intersection of Mā`alo Road and the Kapaia Cane Haul Road to the edge of Hanamā`ulu Stream Valley;
2. However, we would recommend full-time archaeological monitoring of the trenching along the section of the project that begins on the north side of Hanamā`ulu Stream Valley, continuing across the valley and along the old railroad right of way down to `Ehiku Street to Kūhiō Highway, in the event historic artifacts are discovered during trenching. The Aha Moku representative also recommended archaeological monitoring in these areas. The full-time monitoring could be reduced to spot checking in consultation with SHPD if the findings are uneventful and consistent with the soils of the Kapaia Cane Haul Road. If required by SHPD, an Archaeological Monitoring Plan (AMP) will be approved by SHPD before construction begins;
3. The archaeological monitor shall document the architecture of the plantation irrigation features, including the ditches, bridges, culvert, and couple of pani wai or sluice gates. The archaeological monitor will coordinate with Grove Farm for any architectural drawings of the features as well as include current photos;
4. In the event iwi kūpuna (human burial remains) are discovered during the project construction, all work in the immediate vicinity shall cease and the Construction contractor will be required to promptly notify SHPD and the Kaua`i - Ni`ihau Island Burial Council (KNIBC) Chairperson on the disposition of any iwi kūpuna, taking into consideration Uncle Val Ako`s mana`o of keeping the iwi kūpuna within the Hanamā`ulu Ahupua`a or as close to where they were discovered.

5. ENVIRONMENTAL CHARACTERISTICS

5.1 Air Quality and Noise Levels

The existing air quality and noise levels along the proposed Relief Line alignment for each segment were observed by the author in preparation of this environmental assessment as follows:

- Intersection of Kūhiō Highway and `Ehiku Street. Air quality and noise level appear to be most impacted by vehicular traffic that peak during rush-hour. The air quality and noise levels at this location are observed to be similar to those at other intersections along Kūhiō Highway.
- `Ehiku Street. The air quality and noise levels on `Ehiku Street are observed to be similar to other minor streets or collector streets within the Līhu`e area. No major air quality problems or noise problems were observed.
- Kapaia Cane Haul Road. The existing KIUC power plant is located adjacent to the Kapaia Cane Haul Road. The power plant is a fossil fuel burning plant and therefore produces air pollutants; however, it is beyond the scope of this project to analyze the air pollutants. The noise generated from the plant is noticeable from the Kapaia Cane Haul Road. No noise level measurements were taken during the observation.
- Intersection of Kapaia Cane Haul Road and Mā`alo Road. Air quality and noise levels were observed to be most impacted by vehicular traffic. The traffic on Mā`alo Road, however was observed to be relatively sporadic and comparatively light.

The Hawai`i Administrative Rules, Title 11, Department of Health, Chapter 60.1 - Air Pollution Control contains requirements for maintaining acceptable air quality and noise levels. Enforcement of the rule is under the jurisdiction of the Department of Health. The Relief Line will have to abide by all aspects of this rule. The Department of Health was consulted with, and provided input, in regards to air quality and noise levels during the development of this draft environmental assessment; see Chapter 8, Consultation.

Potential Impacts and Mitigative Measures

Construction of the proposed transmission line may result in short-term air quality and noise impacts.

Air Quality: Construction activities may result in short-term air quality impacts, including the generation of dust from soil excavation and asphalt road removal, and from emissions from construction vehicles and equipment.

To mitigate any air quality impacts, all phases of excavation and construction will be required to comply with the Hawai`i Administrative Rules, §11-60.1²² on air pollution and fugitive dust, and comply with all applicable County ordinances.

To comply with the fugitive dust regulations, the KDOW will require that the Contractor implement adequate dust control measures, such methods may include the following:

- Planning different phases of construction, focusing on minimizing the amount of dust generating materials and activities, and locating potentially dusty equipment to areas of the least impact;
- Providing an adequate water source at the site prior to start-up construction activities;
- Providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities;
- Minimizing dust from shoulders and roads;
- Controlling dust from debris being hauled away from the project site. Also, controlling dust from daily operations of materials being processed, stockpiled, and hauled to and from the Relief Line location.

Exhaust emissions from construction equipment and vehicles are not anticipated to significantly alter ambient air quality and can be minimized by proper operation and maintenance of all petroleum-fueled equipment. In addition, the prevailing winds can be expected to dilute and disperse exhaust emissions away from the nearby homes, other structures and Līhu`e Village Park.

Noise: The Relief Line will generate noise during the construction phase. Although noise cannot be eliminated entirely, the Contractor must provide effective control measures to minimize construction related noise from impacting the surrounding area. The hours of operation will be regulated. If required, a Department of Health Community Noise Permit¹⁴ will be obtained.

The proposed Relief Line will be almost entirely below ground and is not expected to generate any air pollution or noise once it is installed and in-place. No long-term air-quality impacts are expected from the Relief Line and accordingly, no mitigating measures are recommended.

5.2 Flora and Fauna

The proposed water transmission line will be constructed almost entirely within the existing paved roadway segments of Kūhiō Highway, `Ehiku Street, Kapaia Cane Haul

Road and Mā`alo Road. **Appendix A** contains a photo log of the project site for reference. The existing flora and fauna surrounding the proposed Relief Line alignment for each segment were observed by the author in preparation of this environmental assessment as follows:

- Intersection of Kūhiō Highway and `Ehiku Street. This area was observed to be urban in nature due to the commercial businesses on both sides of the highway. The businesses adjacent to the intersection have landscaping that is common to other landscaped areas fronting commercial businesses in Līhu`e which include non-native perennials and grass.
- `Ehiku Street. This street contains commercial businesses, a church and several residences. The flora and fauna was observed to be similar to that in most areas of Līhu`e which include non-native perennials and grass.
- Kapaia Cane Haul Road and Intersection with Mā`alo Road. The area surrounding and on either side of the Kapaia Cane Haul Road is either in active agricultural use or was previously in agricultural use. The flora and fauna on the sides of the road were observed to be common types such as Guinea Grass and non-native trees and shrubs.

The large amount of kula lands and the intense use of the land for sugar cultivation in Hanamā`ulu may explain the absence of native flora and fauna. The pattern of plantation land use, plowing and tilling the soil to at least 36-42 inches, rock removal, etc. and the over 150 years of continuous sugarcane cultivation, likely prevented the growth of native flora and fauna in the area.

A biological resource survey was conducted in 2015 by SWCA Environmental Consultants on a site adjacent to the Relief Line. The title of the study is “Biological Resource Survey for the Kaua`i Adolescent Treatment and Healing Center.”²⁷ The site for the Adolescent Treatment and Healing Center was formerly contained within the Relief Line parcel, TMK 3-8-018:001, prior to being subdivided into a separate parcel by the County of Kaua`i. See Exhibit C for a map showing the location of the Adolescent Treatment and Healing Center in relation to the Relief Line.

The Executive Summary of the aforementioned biological resource survey states, in part, on page i²⁷:

“In general, the plant and wildlife species assemblages are typical of those found in disturbed areas on Kaua`i. The survey area does not encompass any designated or proposed critical habitat for threatened or endangered species.

The vegetation type and species identified during the survey are not considered unique, and none of the plant species recorded at the site are native. No threatened or endangered plants, proposed listed plants, or candidate plants were

found. Therefore, the proposed project is not expected to have a significant, adverse impact on botanical resources.

*Based on current distribution and habitat requirements, two federally and state listed species—the Hawaiian goose or nēnē (*Branta sandvicensis*) and the Hawaiian hoary bat or `ōpe`ape`a (*Lasiurus cinereus semotus*)—have a high potential of using the habitat of the survey area. Three listed seabird species—the endangered Hawaiian petrel or u (*Pterodroma sandwichensis*), threatened Newell’s shearwater or (*Puffinus auricularis newelli*), and recently proposed endangered petrel or `ake`ake (*Oceanodroma castro*)—may also fly over the survey area at night while travelling to and from their upland nesting sites to the ocean. Recommendations to avoid and minimize impacts to these species are provided. All other listed species with potential to occur on the Island of Kaua`i are not likely to occur in the survey area because it is either outside the range of the species or appropriate habitat does not occur.”*

The State of Hawai`i, Office of Planning, Hawai`i Statewide GIS Program²¹, has information regarding threatened and endangered plant species and critical habitat. See **Exhibit J** for a map of threatened and endangered plants within the main Hawaiian Islands. See **Exhibit K** for a map of critical habitat within the main Hawaiian Islands. According to these exhibits, the proposed Relief Line area does not contain either threatened and endangered plants or critical habitat.

Potential Impacts and Mitigation

Minimal impact on flora is expected due to the location of the proposed Relief Line underneath existing paved road surfaces. Invasive plant species, however, could possibly be spread during normal construction activities. Some of the flora mitigation measures, as recommended in the *Biological Resource Survey for the Kaua`i Adolescent Treatment and Healing Center*²⁷ (page 5), are recommended to minimize invasive plant species propagation:

- *All construction equipment and vehicles arriving from outside Kaua`i should be washed and inspected before entering the project area.*
- *Construction materials arriving from outside of Kaua`i should also be washed and/or visually inspected (as appropriate) for excessive debris, plant materials, and invasive or harmful nonnative species (plants, amphibians, reptiles and insects) inspected (as appropriate) for excessive debris, plant materials, and invasive or harmful nonnative species (plants, amphibians, reptiles and insects).*

- *When possible, raw materials (e.g., gravel, rock, soil) should be purchased from a local supplier on Kauaʻi to avoid introducing non-native species not present on the island.*

According to the *Biological Resource Survey for the Kauaʻi Adolescent Treatment and Healing Center*²⁷, the Hawaiian goose or nēnē (*Branta sandvicensis*) and Hawaiian hoary bat or ʻōpeʻapeʻa (*Lasiurus cinereus semotus*) may use habitat within the project area. The protected seabirds, Hawaiian petrel or ʻUʻau (*Pterodroma sandwichensis*), Newell’s shearwater or Aʻo (*Puffinus auricularis newelli*), and the Band-rumped storm petrel or ʻAkeʻake (*Oceanodroma castro*) may fly over the project area en route to the mountains or the ocean. Some of the fauna mitigation measures, as recommended in the *Biological Resource Survey for the Kauaʻi Adolescent Treatment and Healing Center*²⁷ (pages 7 and 8), are recommended to minimize impacts:

Nēnē

- *If a nēnē is found in the area during ongoing activities, all activities within 100 feet (30m) of the bird should cease, and the bird should also not be approached. If a nest is discovered, the U.S. Fish and Wildlife Service should be contacted. If a nest is not discovered, work may continue after the bird leaves the area on its own accord.*

Hawaiian Hoary Bat

- *Any fences erected as part of the project should have barbless top-strand wire to prevent entanglements of the Hawaiian hoary bat on barbed wire.*
- *No trees taller than 4.6m (15 feet) should be trimmed or removed as a result of this project between June 1 and September 15, when juvenile bats could be roosting in the trees.*

Seabirds

- *Construction activity should be restricted to daylight hours during the seabird peak fallout period (September 15–December 15) to avoid the use of nighttime lighting that could attract seabirds.*
- *All outdoor lights should be shielded to prevent upward radiation. This has been shown to reduce the potential for seabird attraction (Reed et al. 1985; Telfer et al. 1987). A selection of acceptable seabird-friendly lights can be found online at the Kauai Seabird Habitat Conservation website (2013).*

- *Outside lights that are not needed for security and safety should be turned off from dusk through dawn during the fledgling fallout period (September 15–December 15).*

5.3 Geology, Topography and Soils

Kaua`i is the most northern island in the state, lying less than 19 miles northeast of Ni`ihau. Kaua`i is over 5 million years old and has a roughly circular shape. There are currently two models for the island’s morphology, a single shield model and a two-shield model.²⁸

More than 1.5 million years after the primary shield-building stage had ceased on Kaua`i, rejuvenated volcanism, the Koloa Volcanic Series, began resurfacing two thirds of the eastern side of the island. Locations on the north, east and southern coasts of Kaua`i contain lavas of the Koloa Series. Remnant volcanic vents trend generally north-south across Kaua`i and may be found at a few locations on both the north and south shores.²⁸

Ground elevations within the project area range between 200 feet to 280 feet above mean sea level for the proposed Relief Line alignment. According to the U.S. Department of Agriculture (“USDA”), Natural Resources Conservation Service²⁴, the soil in the region in the project area is primarily the Puhi silty clay loam (PnB). Other soils present within the project area include Hanalei silty clay (HnA), Hanalei silty clay (HrB), Līhu`e silty clay (LhC), Puhi silty clay loam (PnB), Puhi silty clay loam (PnC) and Puhi silty clay loam (PhD).

The Puhi series consists of deep, well drained soils that formed in material weathered from basic igneous rock. Puhi soils have very slow to rapid runoff, depending upon slope, and moderately rapid permeability; the soils are on uplands and have slopes of 3 to 40 percent, with dominant slopes from 3 to 15 percent.

Potential Impacts and Mitigation Measures

Installation of the proposed Relief Line will require trenching of the earth along the majority of the project length. The trenching will likely consist of excavating equipment digging a trench approximately 3 feet wide to depths ranging from approximately 4 feet to 6 feet. A contractor will typically open a segment of trench, and then install the pipe and backfill the trench within one working day. Typical lengths of pipe installation range from 60 feet to 180 feet in a single work day. The existing roadway pavement will be restored after the new pipe has been installed and tested.

Best management practices and erosion control methods to minimize soil erosion during the construction process will be incorporated into construction plans and implemented by the contractor. A National Pollutant Discharge Elimination System¹² (NPDES) permit, as regulated by the State of Hawai`i, Department of Health, Clean Water Branch, will likely be required for this construction project. Implementation of best management practices, erosion control methods, and the NPDES permit requirements will ensure that the proposed Relief Line activities will not substantially degrade the site's environmental quality.

Long-term impacts on the physical terrain for the proposed Relief Line are expected to be minimal. The proposed Relief Line will be almost entirely underground. Erosion or other deleterious effects to the terrain would not be expected after the roadway pavement has been restored.

5.4 Hazards: Flooding and Tsunami

The State of Hawai`i, Department of Land and Natural Resources, provides an informational mapping viewer called Flood Hazard Assessment Tool (FHAT). The tool displays flood zones for properties statewide. The source of flood zone information contained in the FHAT is the Federal Emergency Management Agency (FEMA) digital Flood Insurance Rate Maps (FIRMs).

According to the current FHAT, the project area is located in Zone X; areas determined to be outside of the 0.2% annual chance floodplain, as identified in **Exhibits L and M**.

Potential Impacts and Mitigation Measures

The proposed Relief Line location has an extremely low probability of flooding. As the proposed Relief Line will be constructed underground, it will have little or no impacts on flood or tsunami hazards. The proposed Relief Line will be constructed according to KDOW standards and, as any disturbed ground will be returned to its previous condition, no mitigation measures are proposed.

5.5 Water Resources

The County of Kaua`i, Department of Water, in their 2016 *Water Quality Report for the Līhu`e-Kapa`a Water System*²³, provides the following:

Where does my water come from?

The water comes from ground water (underground) and surface water sources.

Ground water comes from rain that falls in the mountain filters through the ground

into formations called aquifers. Wells are drilled into these formations and the water is pumped out. These formations can also be found in the mountains. Tunnels are constructed to tap these sources. The quality of groundwater is very good and requires no treatment except for disinfection. The surface water source is the Kapaia Reservoir. The water is pumped into a filter plant to remove all the suspended material from the water. The water is then disinfected and fed into the distribution system.

The water supply for the Līhu'e-Kapa'a Water System comes from the following sources:

Puhi Area

Puhi Wells No. 1, 3, & 4

Puhi Wells No. 5A & 5B

Līhu'e-Hanamā'ulu Area

Kalepa Ridge Well

Kilohana Wells A, B, & I

Līhu'e Grammer (sic) School Well

Garlinghouse Tunnel

Pukaki Well

Hanamā'ulu Well No. 3 & 4

Grove Farm Surface Water Treatment Plant (aka Waiahi SWTP)

Wailua-Kapa'a Area

Makaleha Tunnel

Moalepe Tunnel

Kapa'a Homesteads Wells No. 1 & 2

Nonou Wells B & C

Wailua Homesteads Wells A & B

The proposed Relief Line will convey water from the above listed water sources including the existing water sources along Mā'alo road:

- Pukaki Well,
- Hanamā'ulu Well No. 3 & 4, and
- Grove Farm Surface Water Treatment Plant (aka Waiahi SWTP)

Based on the combined flow rate from the current 3.0 MGD capacity of the Waiahi SWTP and the KDOW wells located along Mā'alo road, KDOW determined that the 12-inch main on Kūhiō Highway from Mā'alo Road to the Wilcox Medical Center area is not adequate to transmit the current source water without exceeding the 6 FPS max flow rate allowed by Hawai'i Water System Standards (WSS). The proposed Relief Line is

necessary to meet KDOW standards (6 FPS max flow criteria) with current sources on Mā`alo Road.

The Water Master Plan identified a decrease in system pressures and flows as a result of the Līhu`e Development Plan unless transmission and distribution improvements were provided. Hydraulic modeling showed that the pressure at the Mā`alo Road and Kūhiō Highway intersection, 102' elevation, exceeded the 125 psi maximum under average day demands. As a result of the excess pressure, elevation, and velocity restrictions, the current transmission line capacity is deemed inadequate⁵. The proposed Relief Line is necessary to address this capacity limitation.

The proposed Relief Line will improve the overall water system transmission capability by transmitting water from Waiahi SWTP, Pukaki well, and Hanamā`ulu Wells 3 and 4 sources, which are the existing sources on Mā`alo Road, directly to the central Līhu`e area. It will also improve the system's reliability because it creates transmission redundancy from the existing sources on Mā`alo Road to central Līhu`e which has the greatest demand in the system.

In 1987, the State enacted the *Water Code*²⁶ (HRS Chapter 174C) in order to protect, control, and regulate the use of the State's water resources. The *Water Code* is implemented through the *Hawai`i Water Plan* which addresses water conservation and supply issues throughout the state. The *Hawai`i Water Plan* consists of five (5) parts:

- *Water Resource Protection Plan*²⁷ ("WRPP") to be prepared by the State Department of Land and Natural Resources, Commission on Water Resource Management ("CWRM"),
- *Water Use and Development Plans* for each county which shall be prepared by each separate county and adopted by ordinance, setting forth the allocation of water to land use in that county,
- *State Water Projects Plan* which shall be prepared by the agency which has jurisdiction over such projects in conjunction with other state agencies, and
- *Water Quality Plan* which shall be prepared by the Department of Health, and
- *Agricultural Water Use and Development Plan* ("AWUDP").

The WRPP was completed in 2008 and an update was published in 2016. The WRPP establishes both ground-water and surface-water hydrologic units for the main Hawaiian Islands including the project area. **Exhibit N** and **Exhibit O** contain figures from the WRPP of the ground-water and surface-water hydrologic units.

The *State Water Code*²⁴ provides the following definition:

“Sustainable yield” means the maximum rate at which water may be withdrawn from a water source without impairing the utility or quality of the water source as determined by the commission.”

The proposed Relief Line is located within the Hanamā`ulu Ground-Water Hydrologic Unit (Unit # 20102). The sustainable yield for the Hanamā`ulu Ground-Water Hydrologic Unit is 36 MGD according to Table 3-10 and Figure 3-16 in the WRPP (Exhibit N).

The proposed Relief Line is located within the following Surface-Water Hydrologic Units:

- #2042, Hanamā`ulu, and
- #2044, Nawiliwili.

Source water for the Waiahi SWTP originates from surface-water. The Surface-Water Hydrologic Units that contribute to the SWTP include:

- #2040, Wailua, and
- #2042, Hanamā`ulu.

The WRPP²⁵ provides the following in §3.4.3.1. Assessing Instream Flow Standards:

“Instream flow standards are defined by the State Water Code as a quantity or flow of water or depth of water which is required to be present at a specific location in a stream system at certain specified times of the year to protect fishery, wildlife, recreational, aesthetic, scenic, and other beneficial instream uses.” However, the State Water Code also prescribes that “in formulating the proposed standard, the commission shall weigh the importance of the present or potential uses of water from the stream for noninstream purposes, including the economic impact of restriction of such use.” CWRM is developing a methodology for establishing measurable instream flow standards based upon best available information, along with input from interested parties and agencies.”

The WRPP²⁵ also provides the following in §3.4.3.1. Assessing Instream Flow Standards:

“The Conveyance of Irrigation and Domestic Water Supplies to Downstream Points of Diversion: *To ensure the availability of steam water for irrigation and domestic use in downstream areas, upstream diversions must allow the bypass of sufficient water supplies and the stream channel must be protected to allow for unimpeded flow downstream. The State Water Code provides for the regulation of stream diversions and alterations through a permitting system. In addition,*

CWRM has jurisdiction statewide to hear and render decisions on any dispute regarding water resource protection, water permits, constitutionally protected water interests, or insufficient water supply to meet competing needs. CWRM is in the process of developing a comprehensive database to manage surface water resources statewide, which will include all registered and permitted surface water diversions, permitted stream channel alterations, complaints, and requests for determination of permitting requirements. A project to verify and characterize all registered surface water diversions is also being executed by CWRM to provide updated information on diversion structures, water uses, and basic stream conditions...

Table 3-21, *Inventory of Surface Water Resources* of the WRPP²⁵ contains information on each of the Surface-Water Hydrologic Units including #2040– Wailua, #2042– Hanamā ulu and #2044 – Nāwiliwili. A copy of the page that contains these Surface-Water Hydrologic Units is provided in **Exhibit P**. Table 3-21 indicates that each of the Surface-Water Hydrologic Units affecting the proposed Relief Line is governed by the Interim Inflow Stream Standards contained in HAR §13-169-45²⁸.

Below is an excerpt from HAR §13-169-45²⁶ that is applicable to all projects within the aforementioned Surface-Water Hydrologic Units:

“§13-169-45 Interim instream flow standard for Kauai. The Interim Instream Flow Standard for all streams on Kauai, as adopted by the commission on water resource management on June 15, 1988, shall be that amount of water flowing in each stream on the effective date of this standard, and as that flow may naturally vary throughout the year and from year to year without further amounts of water being diverted off stream through new or expanded diversions, and under the stream conditions existing on the effective date of the standard, except as may be modified by the following conditions:...”

The Commission on Water Resource Management (CWRM) was consulted with, and provided input, in regards to water resources during the development of this Draft EA; see Chapter 8, Consultation.

Potential Impacts and Mitigation Measures

The proposed Relief Line will increase water transmission capacity within the existing KDOW water system; however, it will not result in any increase of the withdrawal of any of the groundwater or surface water sources. The maximum rate of flow from the existing groundwater wells and Waiahi SWTP will not increase as a result of the installation of the proposed Relief Line. As such, the proposed Relief Line is in

compliance with both the WRPP and the Interim Instream Flow Standard as contained in HAR §13-169-45.

The proposed Relief Line has no significant adverse impact on the hydrologic resources or characteristics of the area and therefore, no mitigation measures are proposed.

6. SECONDARY AND CUMULATIVE IMPACTS

“Secondary impact” is defined by HAR 11-200-2 as “effects which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.”

Essentially, secondary impacts are those which induce, change, or intensify development as a result of the project. The Līhu`e Development Plan described the planned development plans of the Wailani project (Molokoa, Ahukini Mauka, and Ahukini Makai) and the Hanamā`ulu Triangle project⁵. These planned developments account for approximately 515 acres of land, or nearly all the acreage available for development in the Līhu`e area, and include single and multi-family residential units, commercial, industrial properties, and public facilities (YWCA, parks).

The proposed Relief Line does not increase source and storage in the Līhu`e area; the proposed Relief Line will not increase withdrawal of water. It is necessary to address the current system limitations. By addressing the current system limitation, through increasing the size of the pipe, may result in the availability of additional transmission capacity. Such additional capacity would be available to future development, subject to the Water System Standards. No relocation of residences, businesses, public facilities or services, parks, or changes to land use are anticipated to occur because of the proposed Relief Line. The proposed Relief Line addresses existing inadequate transmission facilities and does not induce, change, or intensify unplanned growth or development.

“Cumulative impact” is defined by HAR 11-200-2 as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”

Cumulative impacts result when implementation of several projects that individually have limited impacts combine to produce greater impacts or conflicts in mitigation measures. No other roadway or development projects are currently anticipated to be in construction at the same time

and location as the proposed Relief Line. In the event another project is undertaken at the same time the construction contractor, design contractor, and KDOW will work to ensure that cumulative construction-related impacts and service interruptions are minimized to the fullest extent possible. However, even if multiple projects are under construction at the same time as the proposed Relief Line, this would not result in significant cumulative impacts requiring mitigation beyond that imposed for the proposed Relief Line.

The only anticipated impacts are direct but temporary and minimal; disturbance to air quality, noise, and traffic during construction. As the proposed Relief Line, in place complete will be predominately underground (except for appurtenances), it will not involve any secondary or cumulative impacts.

7. ALTERNATIVES TO THE PROPOSED ACTION

As discussed in section 2.2, Purpose and Need, KDOW has identified that the existing water transmission line on Kūhiō Highway in the Hanamā`ulu area from Kapaia Bridge to Wilcox Medical Center is undersized and requires upsizing or an additional transmission line due to its hydraulic constraints. KDOW considered the replacement of the Kūhiō Highway transmission main as an alternative. **Exhibit B** contains a map the proposed Relief line and alternative Kūhiō Highway alignment.

The second alternative is the “no action” alternative.

7.1 Alternative #1 – Kūhiō Highway Alignment

The Kūhiō Highway alignment alternative consists of replacing an existing 12-inch diameter water main with a new 18-inch diameter water main. The length of replacement is approximately 2,000 linear feet. The Kūhiō Highway alignment would entail the installation of a new 18-inch main and removal of the existing 12-inch main after the 18-inch is installed and in-service.

The existing 12-inch main is located within the Kūhiō Highway Right-of-Way and is partially under the highway pavement. KDOW water systems maps indicate that a portion of the 12-inch main was installed in 1977 and another portion was installed in 1986. It is unclear from KDOW records whether there are existing service laterals connected to this segment of 12-inch main.

Replacing the existing 12-inch diameter water main with a new 18-inch diameter water main would provide additional transmission capacity to the Līhu`e system, however, less than the proposed Relief Line would provide. Alternative #1 would not provide the

redundancy in the water system in that it is a replacement alternative instead of an additional alternative. Redundancy in a water system is desirable to ensure stable and predictable water service.

Alternative #1 would have significant traffic impacts during construction. Kūhiō Highway is the major thoroughfare through Līhu`e-Hanamā`ulu and the open-trench type of construction normally used for pipeline installation would be a considerable disruption to traffic. The Department of Transportation would likely require that all pipeline installation work be done at night, however, temporary pavement, steel traffic plates and construction signage would likely disrupt drivers and the flow of traffic even during non-construction hours.

The cost of Alternative #1 is estimated to be approximately \$2,000,000.00. The average cost per foot of pipeline installation within Kūhiō Highway is relatively high due to work within the State highway considerations. Additionally, it is likely that the Department of Transportation would require that the existing 12-inch water main be removed and disposed of, adding significant cost and logistical issues.

Future maintenance, operation, and replacement would be difficult due to heavy use of this paved state highway. There would be significant disruptions to the surrounding residential and commercial neighborhoods as well as to Wilcox Medical Center. Further, this Alternative #1 will not fully address the existing capacity limitations as discussed in section 2.2, Purpose and Need.

7.2 Alternative #2 – No Action

While this alternative would eliminate any potential impact to the project area, KDOW does not believe this alternative meets its purpose, the current capacity limitations would not be addressed, and existing and future water transmission needs within the Līhu`e system would not be met. Specifically, as previously mentioned, based on the combined flow rate from the current 3.0 MGD capacity of the SWTP and the KDOW source wells located along Mā`alo road, KDOW determined that the existing 12-inch water main on Kūhiō Highway from Mā`alo Road to the Wilcox Medical Center area is not adequate to transmit the current source water without exceeding the 6 FPS max flow rate allowed by DOW Water System Standards (WSS).

7.3 Conclusion of Alternate Analysis

The two (2) alternatives were evaluated by KDOW and it was determined that the proposed Relief Line is the preferred action. The proposed Relief Line, as compared to Alternatives #1 and #2, will relieve the hydraulic capacity limitation of the existing

Līhu`e water system. Specifically, as previously mentioned, based on the combined flow rate from the current 3.0 MGD capacity of the SWTP and the KDOW source wells located along Mā`alo road, KDOW determined that the existing 12” water main on Kūhiō Highway from Mā`alo Road to the Wilcox Medical Center area is not adequate to transmit the current source water without exceeding the 6 fps max flow rate allowed by DOW Water System Standards (WSS). The proposed Relief Line is necessary to meet KDOW standards (6 fps max flow criteria) with current sources on Mā`alo Road.

In addition to the improved hydraulic capacity of Alternative #1, the proposed Relief Line provides important redundancy to the Līhu'e water system by providing the flexibility to supply water from two (2) locations along Kūhiō Highway as opposed to one (1) location. The public facilities and services in Līhu`e, such as Wilcox Medical Center, make redundancy a critical consideration for this project.

Additionally, the proposed Relief Line is the preferred alternative because the private road along which the majority of the project will be located has relatively low vehicular traffic flows as compared to Alternative #1. Utilizing a private road will minimize traffic disruption and related annoyances to the public. Air quality and noise levels will be regulated, but concerns about disturbing neighbors during construction are minimal along the private road where there are no residents.

The proposed Relief Line is designed to follow along the existing paved road corridor. The ground within and under this alignment was considerably altered when the road was originally constructed. As such, the impact to flora and fauna are minimal and anticipated to have no significant impact.

The total estimated budget for the proposed Relief Line is \$3,000,000, which is higher than Alternate #1; however, the unit cost for construction would be substantially lower as the majority of the construction work would be within a private road where construction can proceed swiftly without time and cost consuming traffic considerations. In addition to minimizing public nuisance, the proposed Relief Line provides other benefits described herein that are not easily translated into cost but of considerable value to the community within the Līhu`e area.

8. SIGNIFICANT IMPACTS DETERMINATION

KDOW has assessed the impacts of the proposed Relief Line and made the preliminary determination that the proposed Relief Line is not anticipated to cause significant negative impacts to the environment. Therefore, KDOW intends to issue an anticipated Finding of No Significant Impact (AFONSI). KDOW will reconsider this determination

based on the comments received to this draft environmental assessment and issue a final environmental assessment according to HRS 343. The preliminary determination of a FONSI is based on the following:

1. *The proposed action does not involve an irrevocable commitment to loss or destruction of any natural or cultural resources;*

The proposed Relief Line is proposed to be constructed along the existing Kapaia Cane Haul Road and under the existing `Ehiku Street. There are no known trails, paths, gathering of resources, or burials within the proposed project area. The proposed project will not adversely impact the protection of traditional and customary native Hawaiian rights and practices. While the Kapaia Cane Haul Road is historically significant, the proposed project will not adversely impact the integrity of the historic resource as it is a functioning access road for Grove Farm, its sub-lessees, and agencies who use the road for access. In addition, the proposed project will not adversely impact the architectural integrity of the historic plantation irrigation features (i.e. culverts, ditches, etc.) because rather than excavate under them (and potentially jeopardize the functional use of the resource), the proposed construction will be adjusted to provide vertical clearance above the historic irrigation features within the shoulder of the Kapaia Cane Haul Road when they encounter the irrigation features. The proposed project will not result in the loss of any natural resources, surface water or ground water, since the present volume of water output from the groundwater wells and Waiahi SWTP will not increase as a result of the proposed Relief Line.

2. *The proposed Action will not curtail the range of beneficial uses of the environment;*

The proposed Relief Line is primarily constructed under existing paved roads. The proposed construction is compatible with the uses and zoning of the nearby areas. The temporary impact of the construction will be mitigated to the extent possible using standard best management practices. The Relief Line will be installed almost entirely underground. The disturbed area will be returned to the pre-construction state and use. Therefore, the permanent, long-term impact of the Relief Line will not curtail or alter the range of beneficial uses of the environment.

3. *The proposed action does not conflict with the State's long-term goals or guidelines as expressed in Chapter 344, HRS, State Environmental Policy;*

The purpose of the proposed Relief Line is to meet the projected transmission needs, and maintain the public health and welfare for the future community needs. The proposed Relief Line will not involve actions or activities that would adversely affect the natural resources of the project area, and is consistent with the State's long-term environmental goals to conserve natural resources and enhance the quality of life. The proposed Relief Line will not conflict with the State's long-term goals or guidelines as expressed in Chapter 344, HRS, State Environmental Policy.

4. *The proposed action does not substantially affect the economic or social welfare of the community or state;*

Consistent with the Department of Water's Capital Improvement Project for Fiscal Year 2015⁷, the economic impacts on the community and state will not be negatively affected. The budget for the proposed Relief Line will not substantially adversely affect the economy while providing a public utility. Some short-term economic benefits will occur during the construction phase of the proposed Relief Line. The short-term construction jobs created will boost the economy, but are anticipated to be filled by local residents and, thus, will not increase in-migration. The project will provide long-term economic benefits for improved water service and the redundancy of the system should other transmission lines break or leak, most notably for Wilcox Medical Center and Wilcox Elementary School.

5. *The proposed action does not substantially affect public health;*

Construction activities will be regulated to minimize noise, dust, and erosion concerns. The purpose of the proposed Relief Line is to meet the current transmission needs, and maintain the public health and welfare for residents, visitors, and commercial customers in the Līhu`e area. The proposed Relief Line will not negatively affect long-term public health but rather, the improved reliability and stability of the water system will benefit the entire Līhu`e community.

6. *The proposed action does not involve substantial secondary effects;*

The proposed Relief Line will assist in meeting the goals of the Kaua`i General Plan, Kaua`i Water Use and Development Plan, and the current and future needs of the growing development and population within the general area. The proposed Relief Line addresses existing inadequate transmission facilities and does not induce, change, or intensify unplanned growth or development and, thus, the proposed Relief Line will not involve substantial secondary effects.

7. *The proposed action does not involve substantial degradation of environmental quality;*

There are no known rare, threatened, or endangered plants or animal species, or their habitats within or near the proposed action site. Short-term impacts include disruption to the existing paved roads and an increase in noise levels from construction activities, however, implementation of mitigation measures and Best Management Practices for all construction activity will ensure that the proposed Relief Line will not substantially degrade the site's environmental quality.

8. *The proposed action does not cumulatively have a considerable effect on the environment or involve a commitment to larger actions;*

No other roadway or development projects are currently anticipated to be in construction at the same time and location as the proposed Relief Line. However, even if multiple projects are under construction at the same time as the proposed Relief Line, this would not result in significant cumulative impacts requiring mitigation beyond that imposed for the proposed Relief Line. No cumulative impacts as a result of the proposed Relief Line are anticipated as the project is confined within a limited area. The proposed Relief Line addresses existing inadequate transmission facilities and is not a commitment to larger actions.

9. *The proposed action does not affect a rare, threatened, or endangered species or its habitat;*

There are no known rare, threatened, or endangered plants or animal species, or their habitats within or near the proposed action site area. The overall area of the proposed action was in agriculture, and the water transmission line is proposed to be constructed under an existing paved road. Short-term impacts include disruption to the to the existing paved roads and an increase in noise levels from construction activities, however, implementation of mitigation measures and Best Management Practices for all construction will ensure that the Relief Line activities will not affect a rare, threatened, or endangered species or its habitat.

10. *The proposed action does not detrimentally affect air or water quality or ambient noise levels;*

Short-term impacts include disruption to the project site, decline in air quality and an increase in noise levels from construction activities. These impacts will be mitigated by normal construction practices and will be regulated by the project plans and

specifications. Once construction is completed, no long-term effects on air or noise are anticipated.

11. The proposed action does not affect an environmentally sensitive area;

The proposed Relief Line is not located adjacent to the shoreline and is outside the flood hazard area and tsunami inundation line. There are no natural drainage ways draining onto the project site and there are no conditions that would classify the project area as a wetland. Implementation of Best Management Practices will be employed to properly manage potential storm water runoff or soil erosion. The proposed Relief Line area will not affect an environmentally sensitive area and no damages to the facilities or surrounding areas are expected as a result of the project.

12. The proposed action does not substantially affect scenic vistas and view planes; and

The area included in the proposed Relief Line has not been identified as a scenic resource. Following the final construction of the project, no view planes will be impacted.

13. The proposed action does not require substantial energy consumption.

The demand for both the construction and needs for the proposed Relief Line is small and will not result in substantial energy consumption. Minor energy consumption may occur during the construction phase of the proposed Relief Line.

9. CONSULTATION

The below listed government agencies, utilities, community organizations and adjacent property owners were informed of the pending Draft EA publication by means of certified letters sent by Kodani & Associates Engineers, LLC. Input from these agencies, organizations and neighbors was requested in the notification letter. The below Table No. 4 contains a list of those notified and also contains the type of response from those contacted.

Questions, input and advice from those that responded was integrated, to the extent possible, in the Draft EA. A copy of all written correspondence is contained in **Appendix B - Pre-Consultation Response Correspondence.**

Table 4 - Parties Consulted and/or Informed of the EA Process

Pre-Consultation Notice Distribution	Pre-Consultation Response Type
<u>Federal</u>	
Natural Resources Conservation Service	None
<u>State of Hawai`i</u>	
Senator Ronald Kouchi	None
Representative James Tokioka	Phone Meeting
Department of Health, Environmental Health Program, Kauai Office	Letter
Department of Health, Environmental Planning Office	Letter
Department of Transportation, Kaua`i District Office, Highways Division	Letter / Plan Review
Department of Land & Natural Resources, Commission on Water Resources Management	Phone Meeting
Department of Land & Natural Resources, State Historic Preservation Division	Letter
Department of Land & Natural Resources, Aha Moku Council	Email
Office of Hawaiian Affairs, Compliance Specialist	None
Office of Hawaiian Affairs, Kauai Trustee	None
Department of Hawaiian Home Lands, Planning Office	None
Department of Education, Kauai District Office	None
<u>County of Kaua`i</u>	
Office of the Mayor	Meeting
Kaua`i County Council, Council Chair Rapozo	Meeting
Kaua`i County Council, Council Vice Chair Kagawa	None
Kaua`i County Council, Councilmember Brun	Meeting
Kaua`i County Council, Councilmember Chock	Meeting
Kaua`i County Council, Councilmember Kaneshiro	Meeting
Kaua`i County Council, Councilmember Kawakami	Meeting
Kaua`i County Council, Councilmember Yukimura	Meeting
Planning Department, Planning Director	Meeting
Department of Public Works, County Engineer	Letter
Department of Public Works, Solid Waste Division	Letter
Department of Public Works, Engineering Division	Letter / Plan Review
Department of Public Works, Wastewater Management Division	Plan Review
Fire Department, Fire Chief & Staff	Meeting
Housing Agency, Housing Director	Meeting
<u>Utilities</u>	
Kaua`i Island Utility Company (KIUC)	Plan Review
Hawaiian Telcom	Plan Review
Oceanic Cable	Plan Review

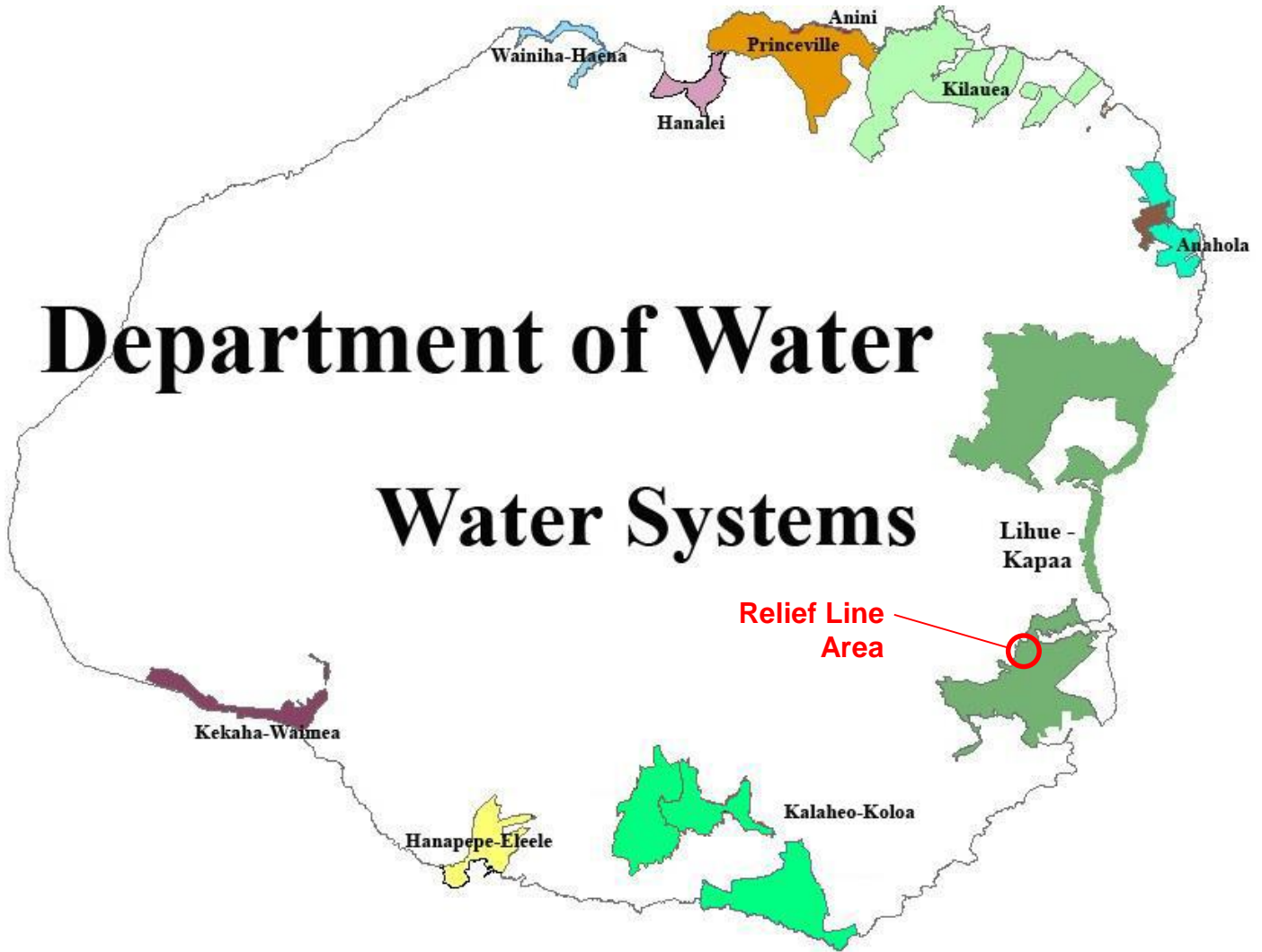
<u>Organizations</u>	
Hui Ho`opulapula Na Wai o Puna	None
Kaua`i Chamber of Commerce	Letter
Lihu`e Business Association	None
Wilcox Medical Center	Meeting
Kaua`i Watershed Alliance	Letter
East Kaua`i Water Users Cooperative	None
<u>Neighbors</u>	
AT&T (business)	None
Kawakami residence	Email
Luis residence	None
Costa residence	None
Calipjo residence	None
Dunn residence	None
Church of Jesus Christ of Latter-Day Saints	None
Pigao residence	None
Chan residence	None
Delgado residence	None
Honolulu Limited	None
Barklow residence	Letter

10. REFERENCES

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16. Kaua`i General Plan Update: Socioeconomic Analysis and Forecasts, February 2014. Accessed 11-24-15.
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19. State of Hawai`i, Department of Land and Natural Resources, Administrative Rules §13-275. Available at: <http://files.hawaii.gov/dlnr/shpd/rules/275.pdf>.
20. State of Hawai`i, Department of Health, Administrative Rules §11-60.1-33. Available at: http://health.hawaii.gov/cab/files/2014/06/har_11-60_1.pdf. Accessed 11-24-15.
21. State of Hawai`i, Office of Planning, Hawai`i Statewide GIS Program. Available at: <http://planning.hawaii.gov/gis/>. Accessed 11-24-15.

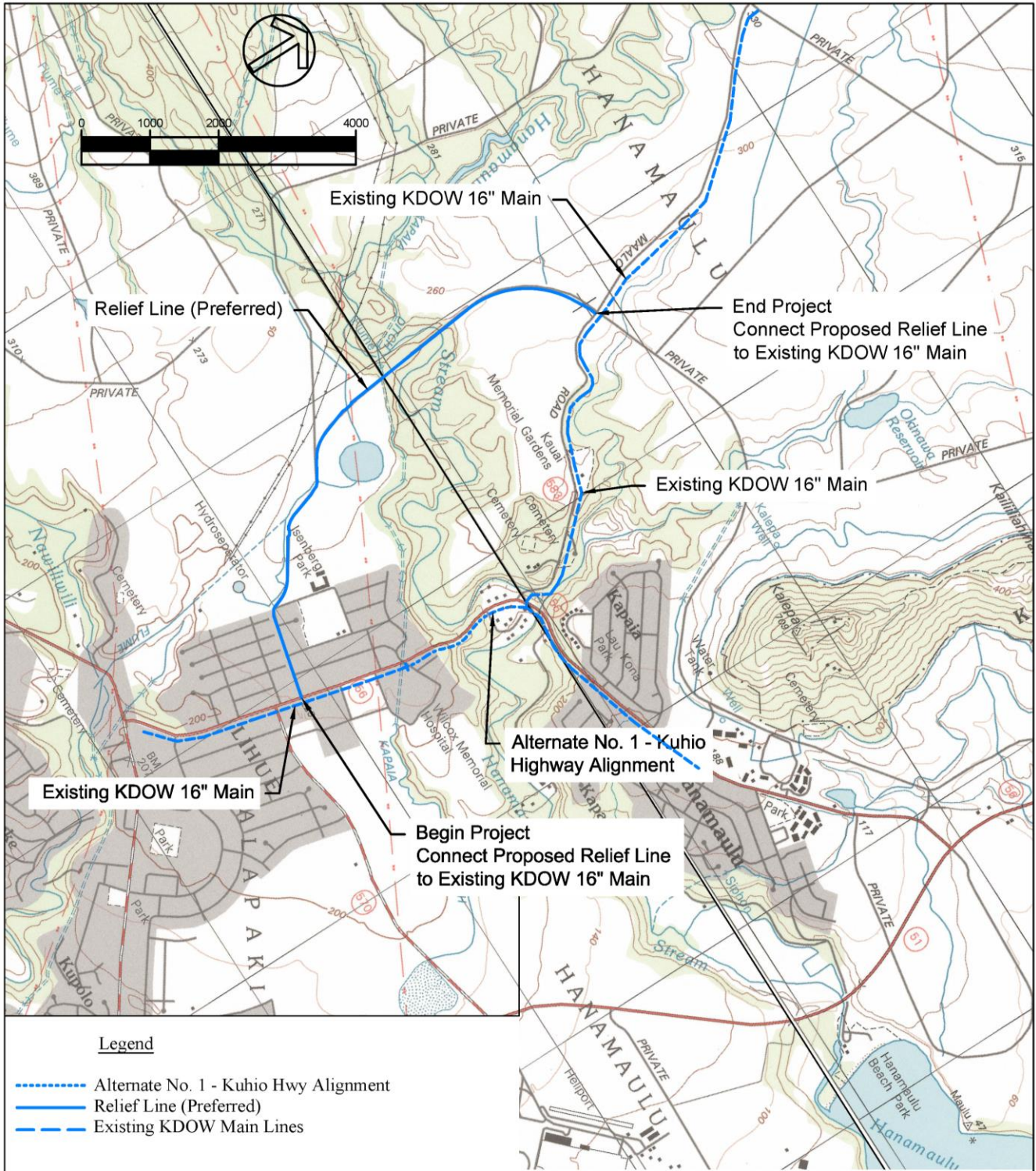
22. U.S. Department of Agriculture, Natural Resources Conservation Service. Web soil survey available at:
<http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>. Accessed 11-08-15.
23. County of Kaua`i, Department of Water, “*Water Quality Report Līhu`e Kapa`a Water System 2016*”. Available at: http://www.kauaiwater.org/wqr_lihue.pdf. Accessed 11-24-15.
24. State Water Code Chapter 174C. Available at:
<http://files.hawaii.gov/dlnr/cwrm/regulations/Code174C.pdf>. Accessed 01-11-17
25. State of Hawai`i, Department of Land and Natural Resources, Commission on Water Resource Management. “*Water Resource Protection Plan, June 2008.*”
26. State of Hawai`i, Department of Land and Natural Resources, Administrative Rules §13-169-45. Available at: <http://files.hawaii.gov/dlnr/cwrm/regulations/13-169-44.pdf>. Accessed 01-16-16.
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28. University of Hawai`i, School of Ocean and Earth Science and Technology, Coastal Geology Group, Available at:
<http://www.soest.hawaii.edu/coasts/publications/hawaiiCoastline/kauai.html>. Accessed 01-17-18.



Department of Water

Water Systems

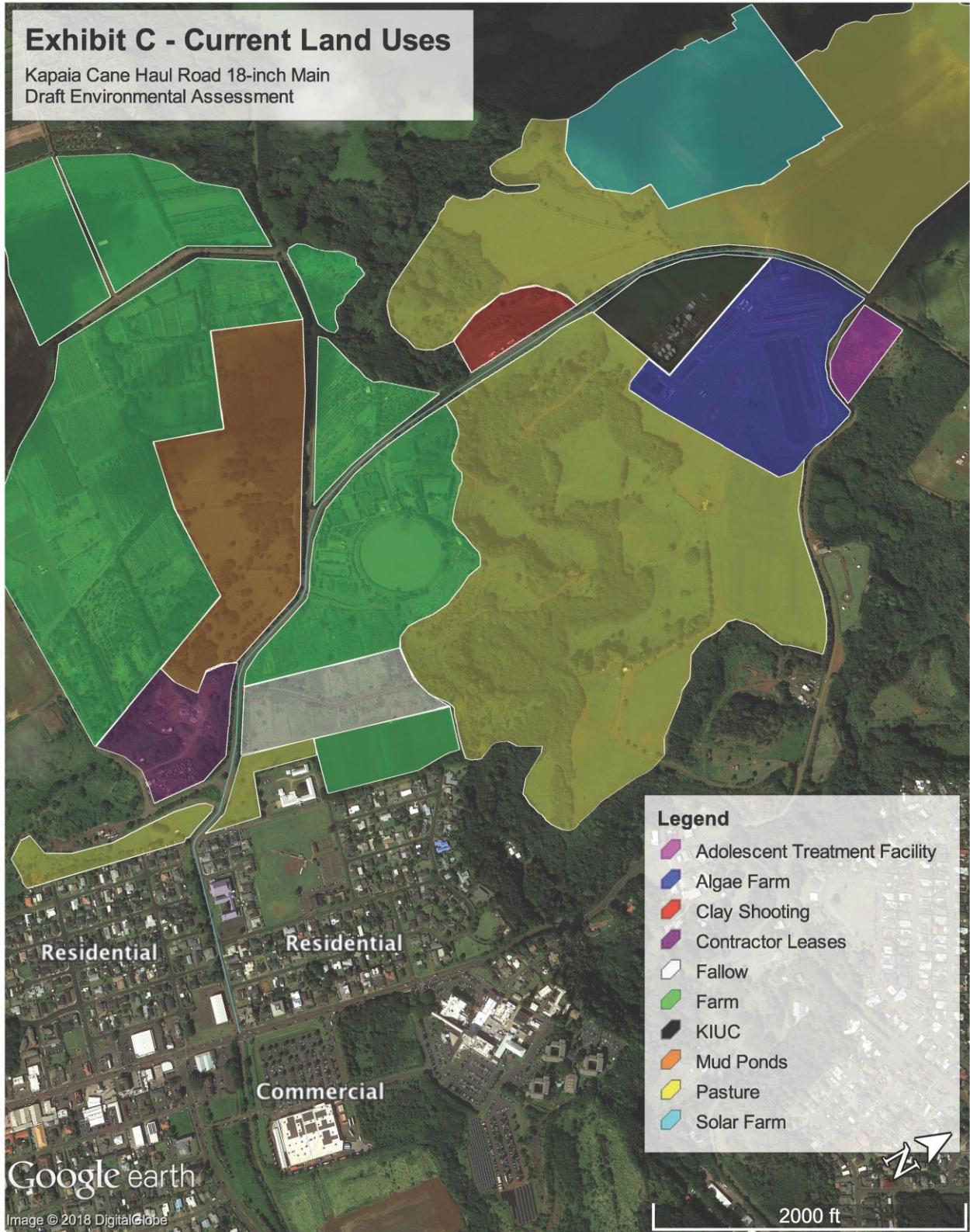
EXHIBIT A:
Relief Line Location Map
 County of Kaua'i, Department of Water,
Water Quality Report Lihue-Kapaa Water System 2016²³

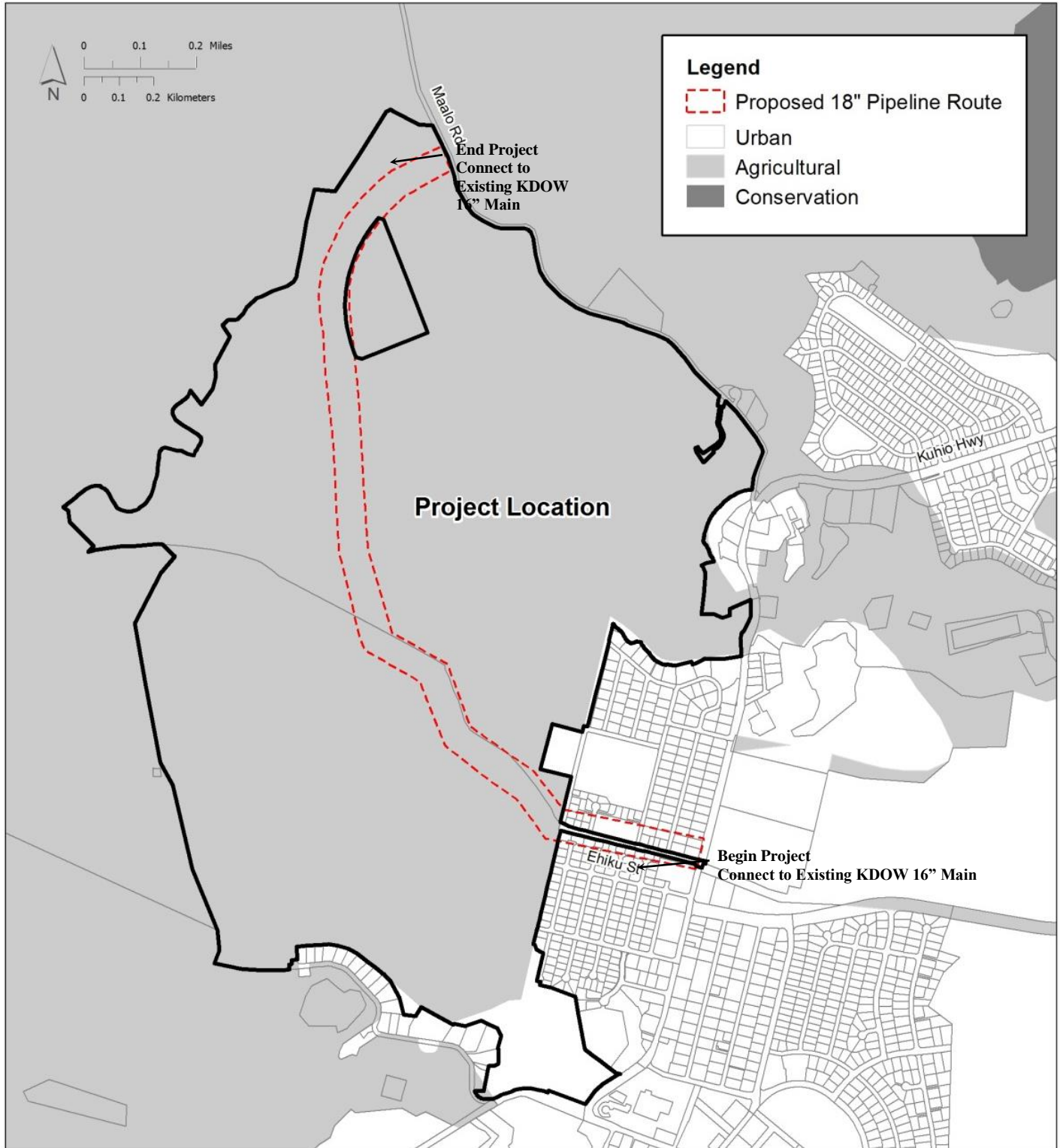


**EXHIBIT B:
Relief Line & Alternate #1 Location Map
USGS Quadrangle Map (Base Map)**

Exhibit C - Current Land Uses

Kapaia Cane Haul Road 18-inch Main
Draft Environmental Assessment





**EXHIBIT D:
Relief Line Location Map
State Land Use Map (Base Map)**

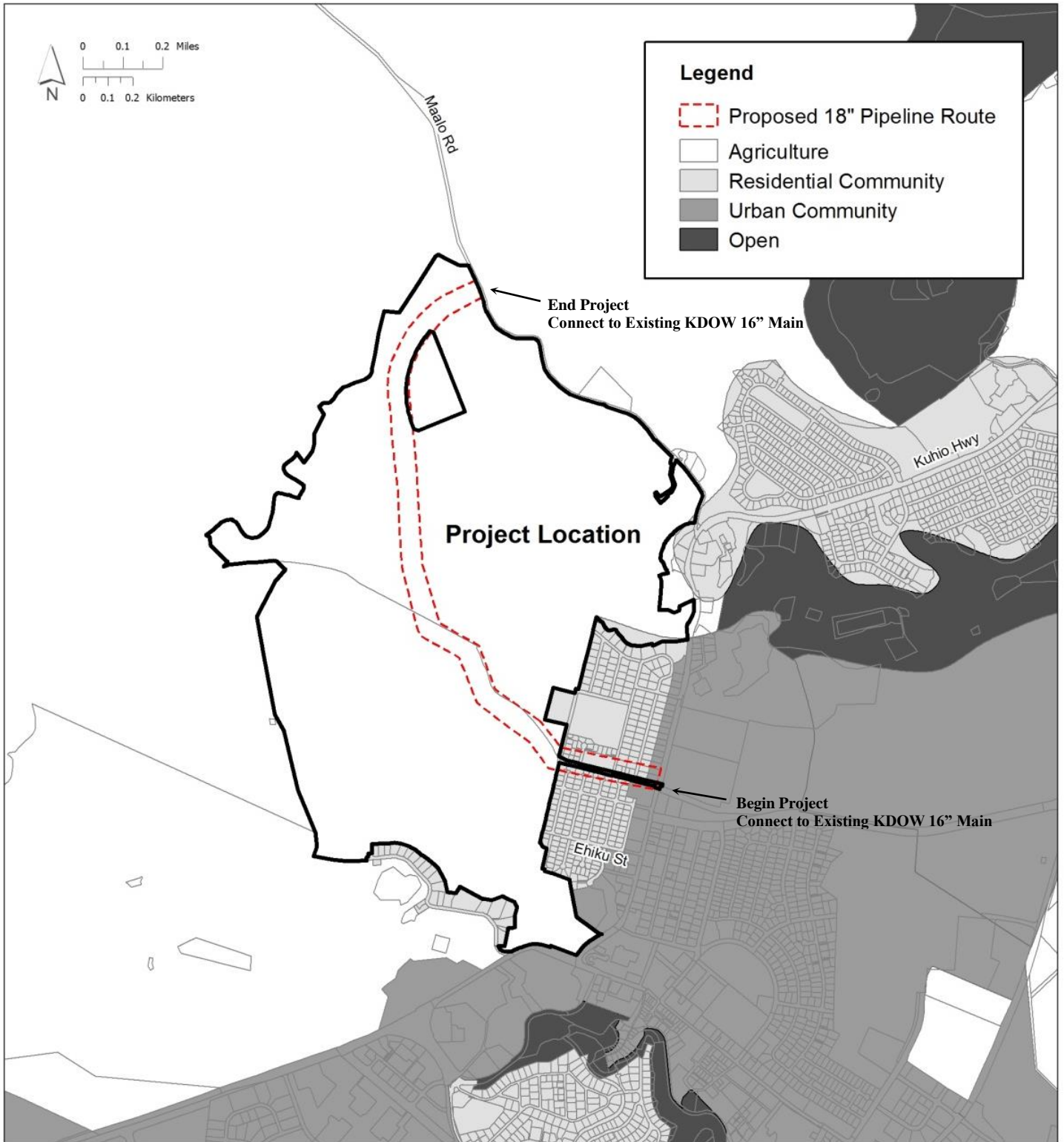


EXHIBIT E:
Relief Line Location Map
Kaua`i General Plan Map (Base Map)¹⁰

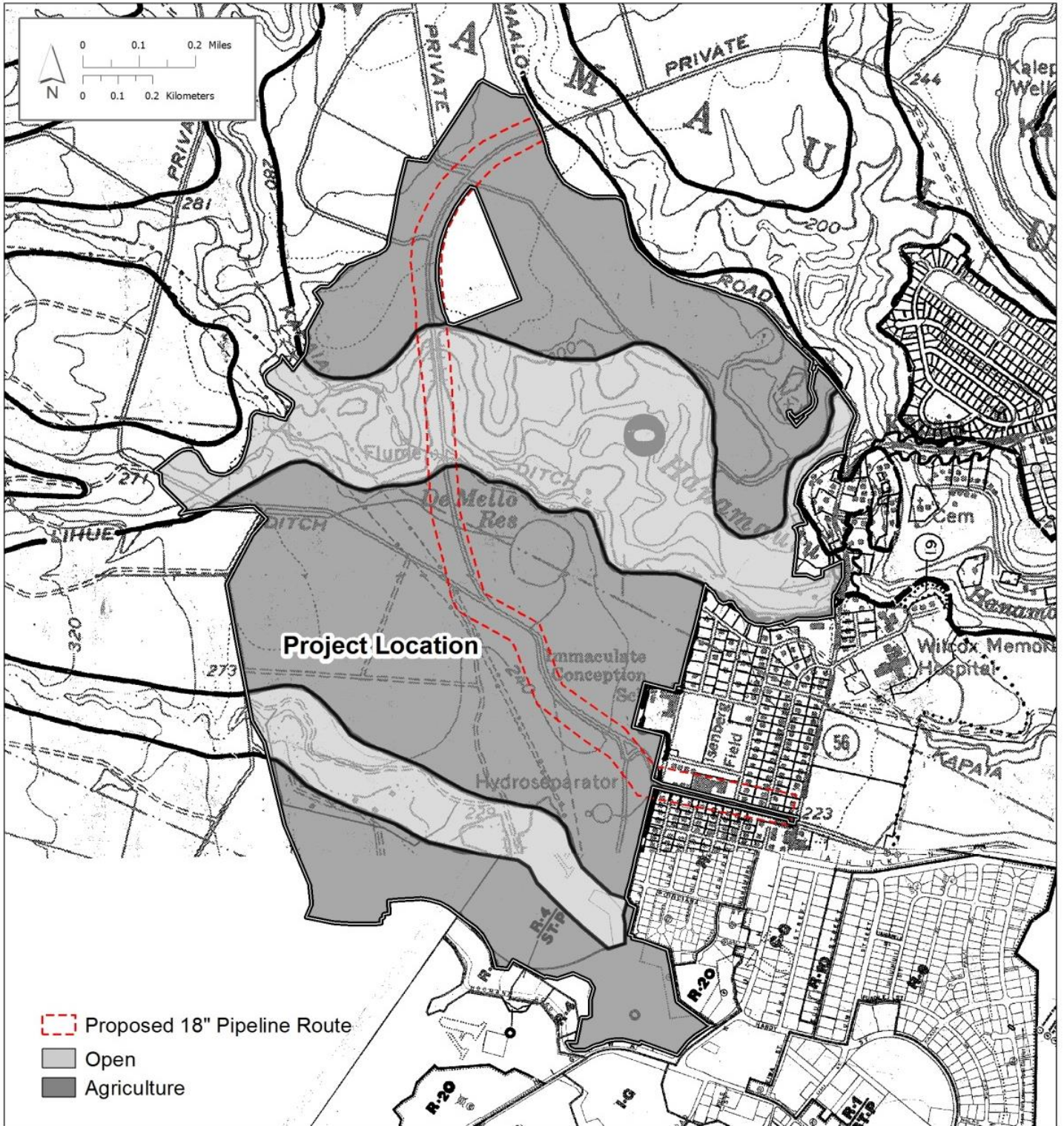
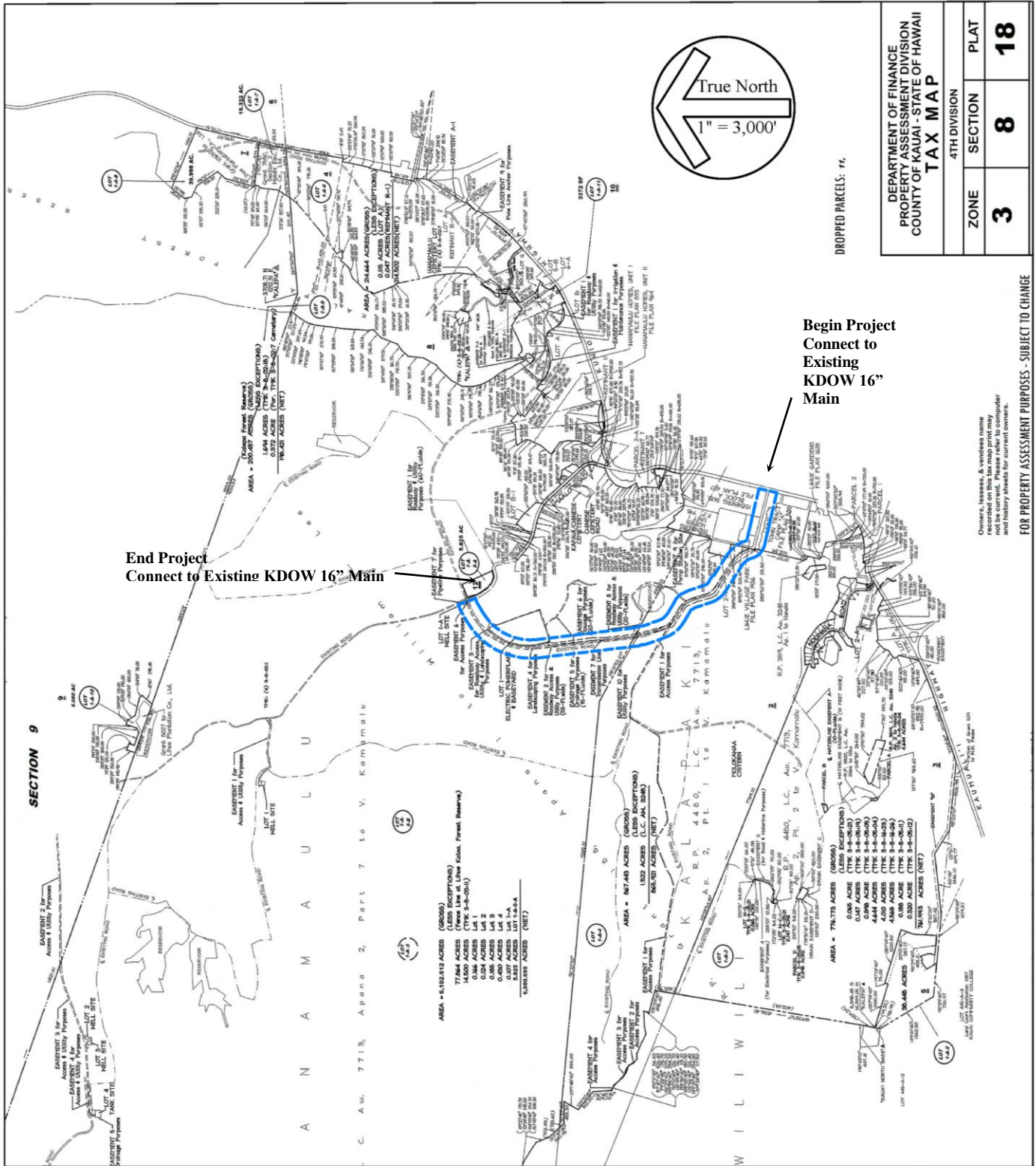


EXHIBIT F:
Relief Line Location Map
County Zoning Map (Base Map)



End Project
Connect to Existing KDOW 16" Main

Begin Project
Connect to
Existing
KDOW 16"
Main

DROPPED PARCELS: 11,

DEPARTMENT OF FINANCE PROPERTY ASSESSMENT DIVISION COUNTY OF KAUAI - STATE OF HAWAII TAX MAP			
4TH DIVISION			
ZONE	SECTION	PLAT	
3	8	18	

Owners, lessees, & vendees name
recorded on this tax map print may
not be the same as the owner
and history sheets for current owners.

FOR PROPERTY ASSESSMENT PURPOSES - SUBJECT TO CHANGE

EXHIBIT G:
Relief Line Location Map
TMK Plat (4) 3-8-018

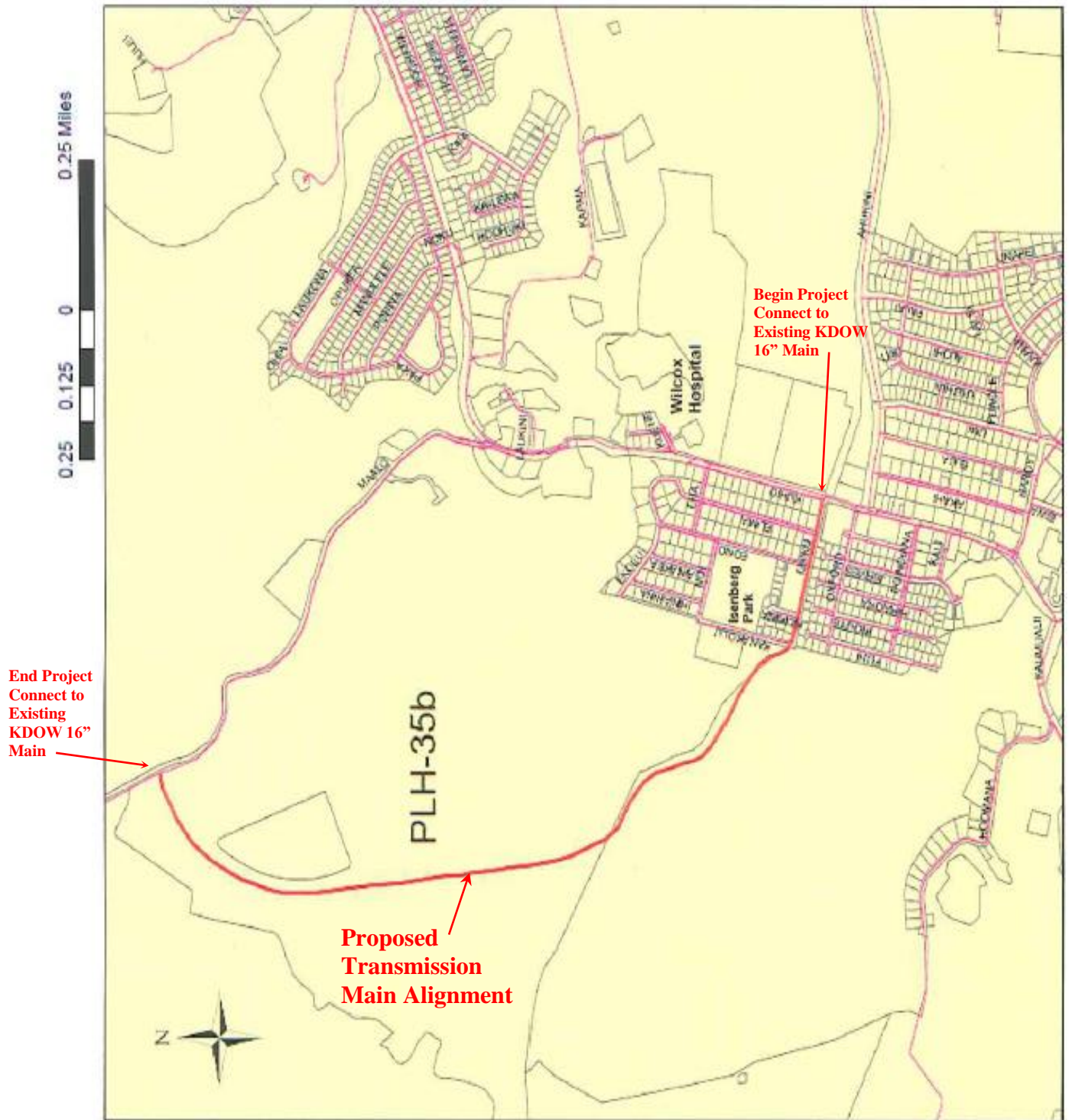


EXHIBIT H:
Map from County of Kaua`i, Department of Water
“Proposed Capital Improvement Projects”
Project PLH-35b, Kapaia Cane Haul Road 18-inch Main⁷

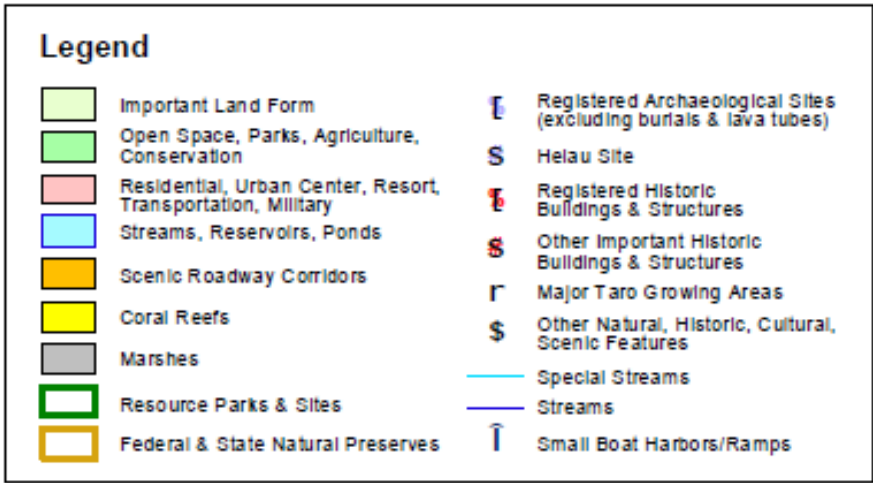
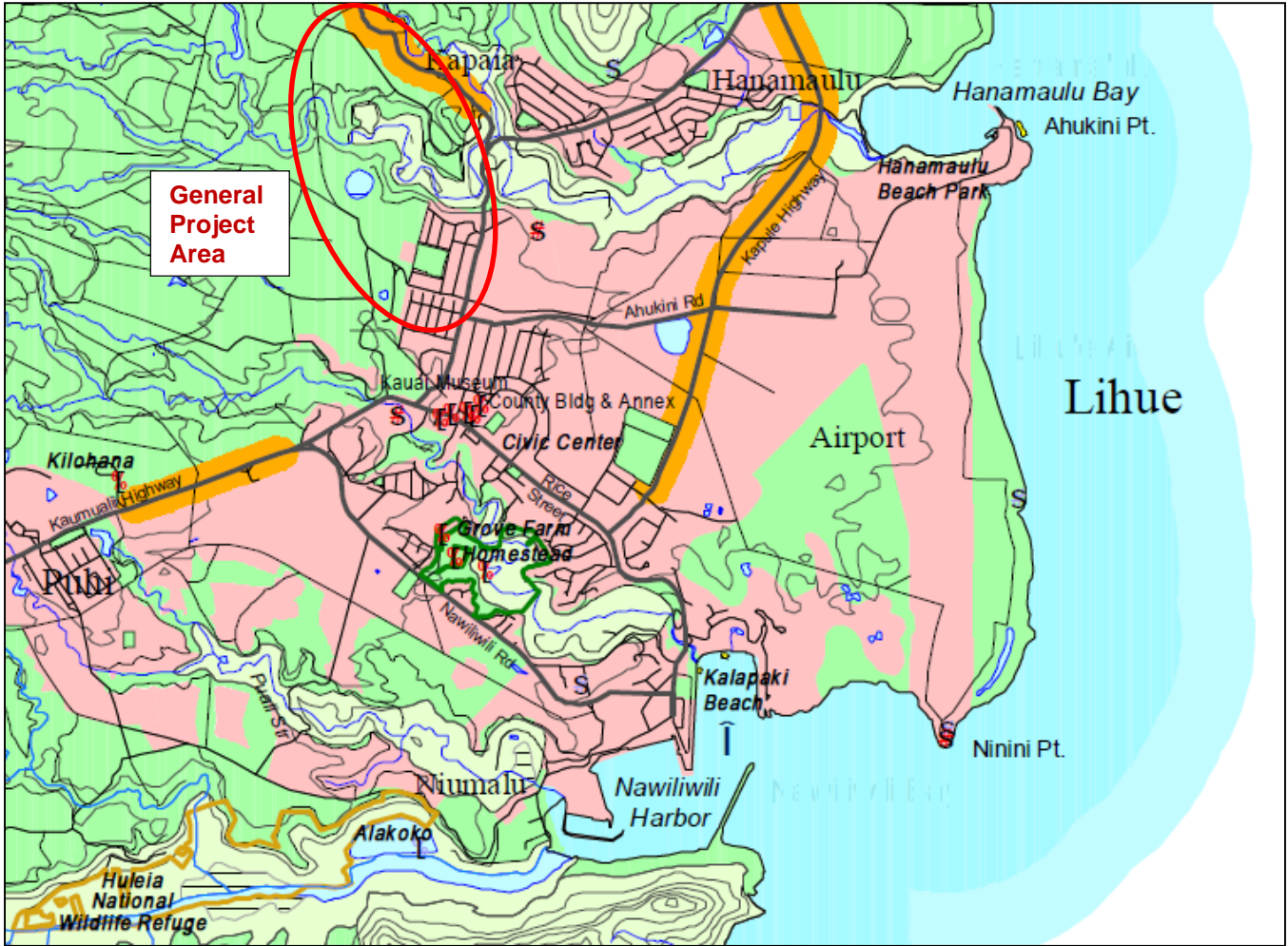


EXHIBIT I:
Lihue Planning District, Heritage Resources Map
County of Kauai, Kauai General Plan¹⁰

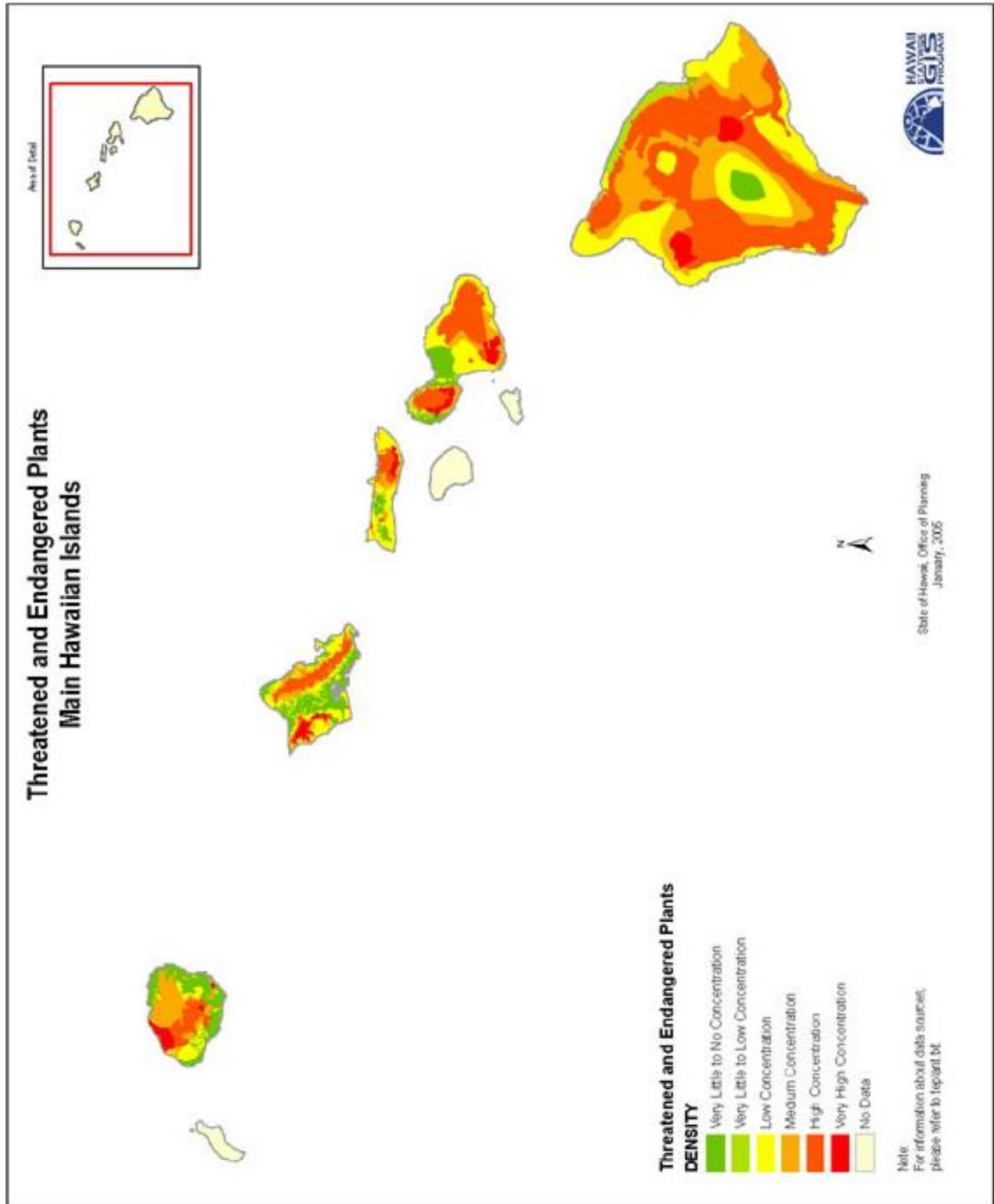


EXHIBIT J:
Threatened and Endangered Plants, Main Hawaiian Islands, January 2006
 State of Hawai`i, Office of Planning, Hawai`i Statewide GIS Program

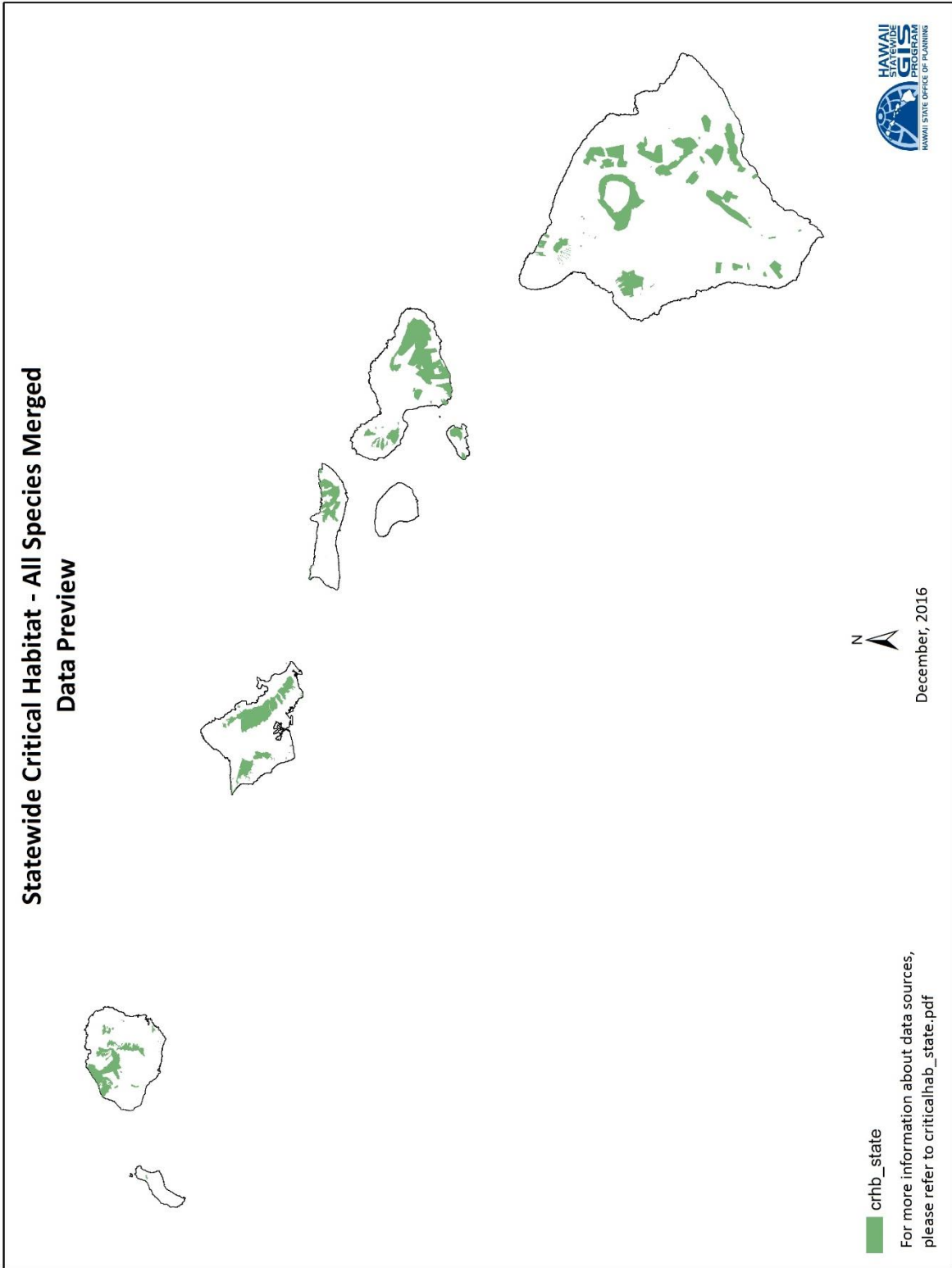
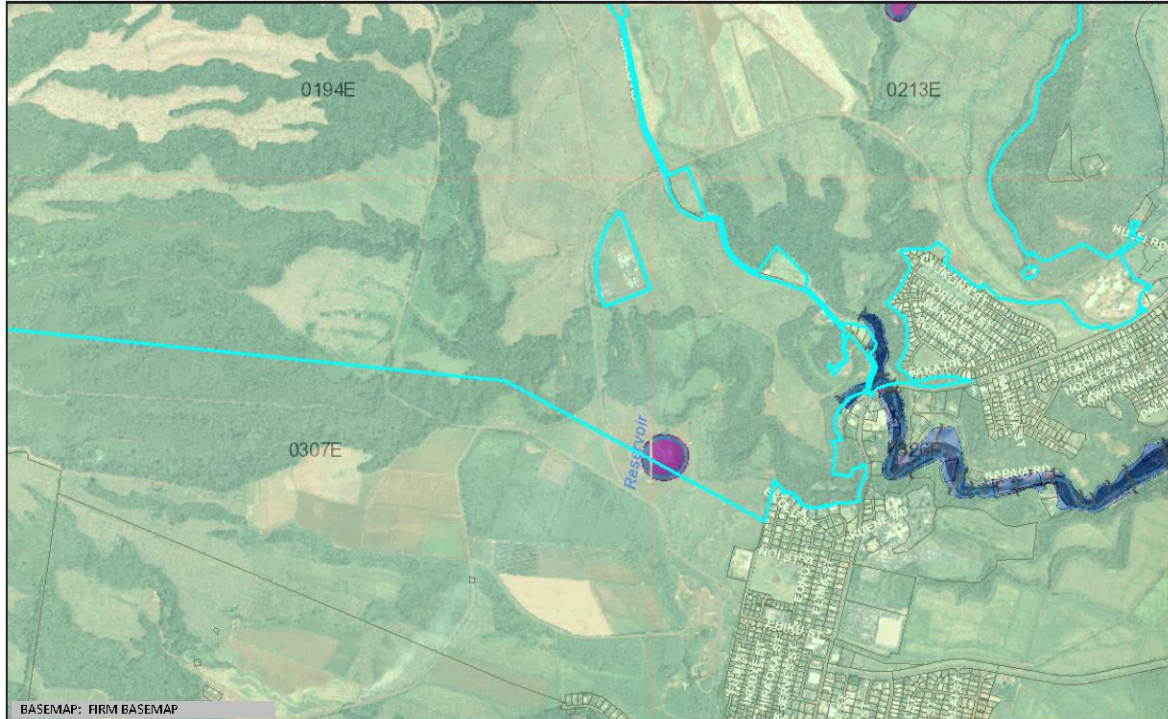


EXHIBIT K:
Statewide Critical Habitat – All Species Merged, December 2016
State of Hawai`i, Office of Planning, Hawai`i Statewide GIS Program



Flood Hazard Assessment Report

www.hawaii.nfp.org

Property Information

COUNTY: KAUAI
 TMK NO: (4) 3-8-018:001
 WATERSHED: HANAMAULU; KAWILOA; NAWILIWILI;
 WAILUA;
 PARCEL ADDRESS: 4590 MAALO RD
 LIHUE, HI 96766

Notes:

Flood Hazard Information

FIRM INDEX DATE: NOVEMBER 26, 2010
 LETTER OF MAP CHANGE(S): NONE
 FEMA FIRM PANEL - EFFECTIVE DATE: 0191E - PANEL NOT PRINTED; 0193E - PANEL NOT PRINTED;
 0194E - SEPTEMBER 16, 2005; 0213E - SEPTEMBER 16, 2005;
 0306E - PANEL NOT PRINTED; 0307E - SEPTEMBER 16, 2005;
 0326F - NOVEMBER 26, 2010;

THIS PROPERTY IS WITHIN A TSUNAMI EVACUATION ZONE: NO
 FOR MORE IP

THIS PROPER
 FOR MORE IP



Disclaimer: The user assumes all responsibility for the use, accuracy, completeness, and timeliness of any information contained in this report. Viewers/users are responsible for verifying the accuracy of the information and agree to indemnify the DLNR, its officers, and employees from any liability which may arise from its use of its data or information.

If this map has been identified as "PRELIMINARY", please note that it is being provided for informational purposes and is not to be used for flood insurance rating. Contact your county floodplain manager for flood zone determinations to be used for compliance with local floodplain management regulations.

FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND (Note: legend does not correspond with NFHL)

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD - The 1% annual chance flood (100-year), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. SFHAs include Zone A, AE, AH, AO, V, and VE. The Base Flood Elevation (BFE) is the water surface elevation of the 1% annual chance flood. Mandatory flood insurance purchase applies in these zones:

	Zone A: No BFE determined.
	Zone AE: BFE determined.
	Zone AH: Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.
	Zone AO: Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.
	Zone V: Coastal flood zone with velocity hazard (wave action); no BFE determined.
	Zone VE: Coastal flood zone with velocity hazard (wave action); BFE determined.
	Zone AEF: Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

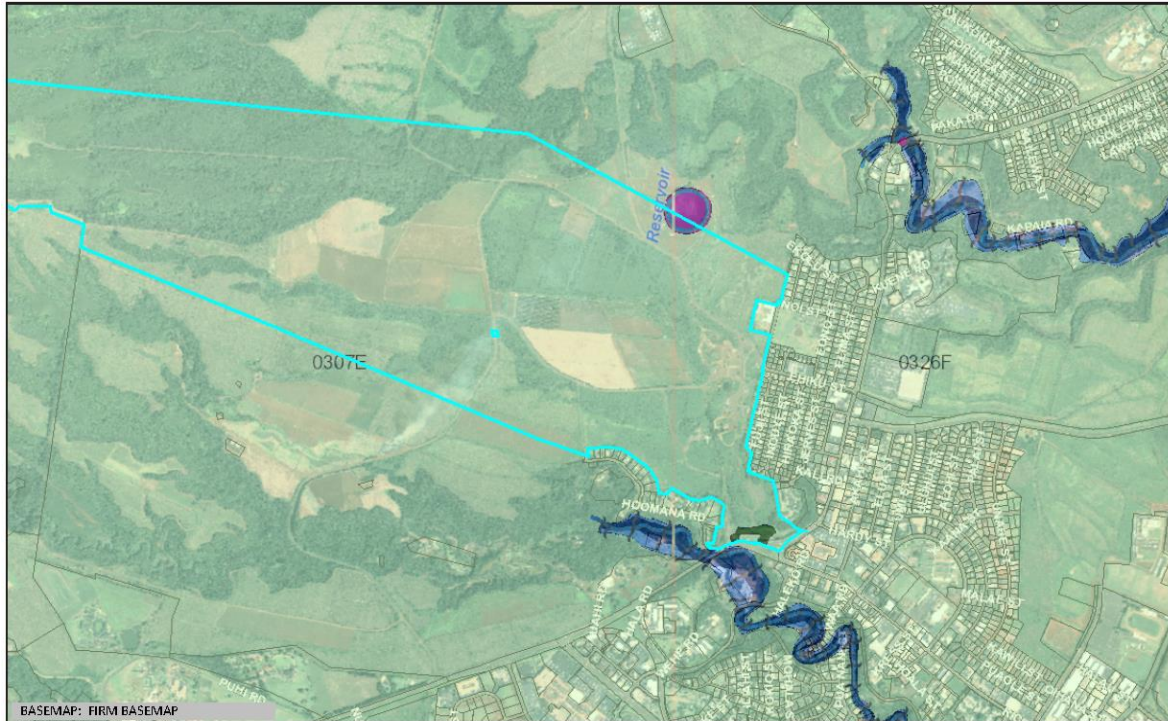
NON-SPECIAL FLOOD HAZARD AREA - An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

	Zone X5 (X shaded): Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
	Zone X: Areas determined to be outside the 0.2% annual chance floodplain.

OTHER FLOOD AREAS

	Zone D: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase apply, but coverage is available in participating communities.
--	--

EXHIBIT L: Flood Hazard Map TMK (4) 3-8-018:001



Flood Hazard Assessment Report

www.hawaii.nfp.org

Property Information

COUNTY: KAUAI
 TMK NO: (4) 3-8-018:002
 WATERSHED: HANAMAULU; NAWILIWILI
 PARCEL ADDRESS: 4538 HOOMANA RD
 LIHUE, HI 96766

Notes:

Flood Hazard Information

FIRM INDEX DATE: NOVEMBER 26, 2010
 LETTER OF MAP CHANGE(S): NONE
 FEMA FIRM PANEL - EFFECTIVE DATE:
 1500020306E - PANEL NOT PRINTED
 1500020307E - SEPTEMBER 16, 2005
 1500020326F - NOVEMBER 26, 2010

THIS PROPERTY IS WITHIN A TSUNAMI EVACUATION ZONE: NO
 FOR MORE INFO, VISIT: <http://www.scd.hawaii.gov/>

THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: YES (KA-0012)
 FOR MORE INFO, VISIT: <http://dlhreg.hawaii.gov/dam/>



Disclaimer: The Hawaii Department of Land and Natural Resources (DLNR) assumes no responsibility arising from the use, accuracy, completeness, and timeliness of any information contained in this report. Viewers/Users are responsible for verifying the accuracy of the information and agree to indemnify the DLNR, its officers, and employees from any liability which may arise from its use of its data or information.

If this map has been identified as 'PRELIMINARY', please note that it is being provided for informational purposes and is not to be used for flood insurance rating. Contact your county floodplain manager for flood zone determinations to be used for compliance with local floodplain management regulations.

FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND (Note: legend does not correspond with NFHL)

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD - The 1% annual chance flood (100-year), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. SFHAs include Zone A, AE, AH, AO, V, and VE. The Base Flood Elevation (BFE) is the water surface elevation of the 1% annual chance flood. Mandatory flood insurance purchase applies in these zones:

	Zone A: No BFE determined.
	Zone AE: BFE determined.
	Zone AH: Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.
	Zone AO: Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.
	Zone V: Coastal flood zone with velocity hazard (wave action); no BFE determined.
	Zone VE: Coastal flood zone with velocity hazard (wave action); BFE determined.
	Zone AEF: Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

NON-SPECIAL FLOOD HAZARD AREA - An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

	Zone XS (X shaded): Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
	Zone X: Areas determined to be outside the 0.2% annual chance floodplain.

OTHER FLOOD AREAS

	Zone D: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase apply, but coverage is available in participating communities.
--	--

EXHIBIT M: Flood Hazard Map TMK (4) 3-8-018:002

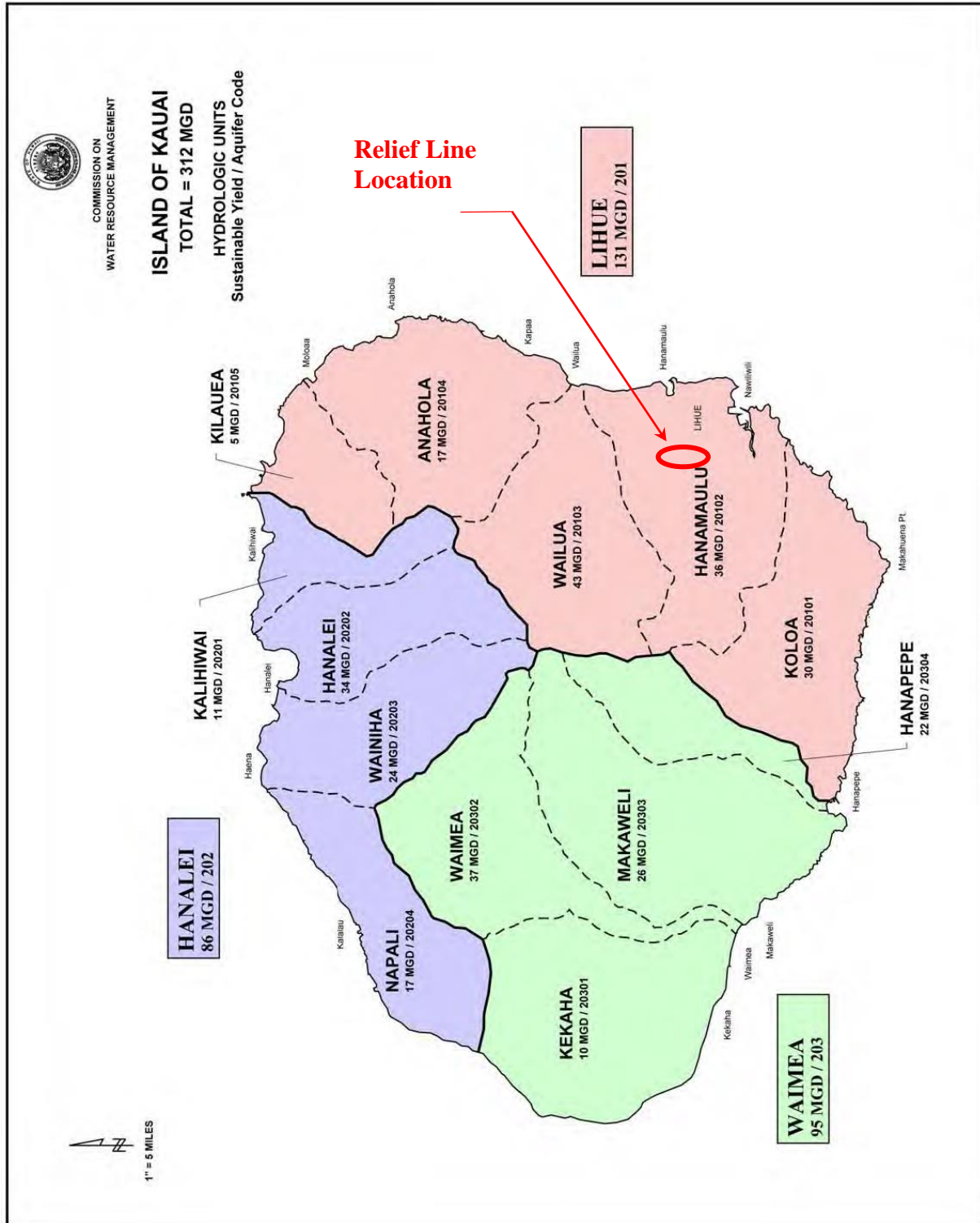


Figure 3-16: Island of Kauai Ground Water Hydrologic Units and 2008 Sustainable Yields

EXHIBIT N:

Figure 3-16: Island of Kaua'i Ground-Water Hydrologic Units
State of Hawai'i, *Water Resource Protection Plan*²⁷, June 2008

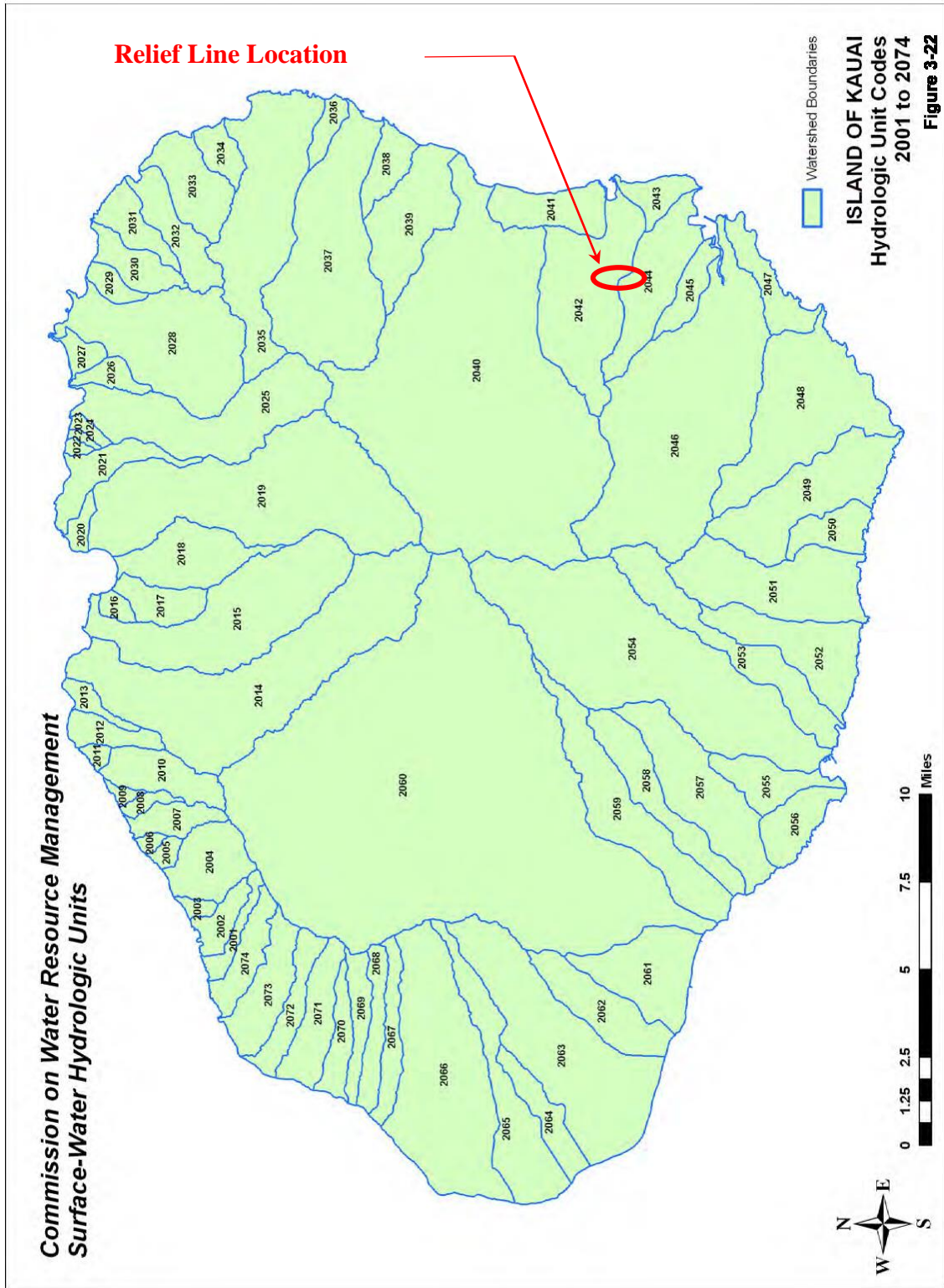


EXHIBIT O:
Figure 3-22: Island of Kaua'i Surface-Water Hydrologic Units
State of Hawai'i, *Water Resource Protection Plan*²⁵, June 2008

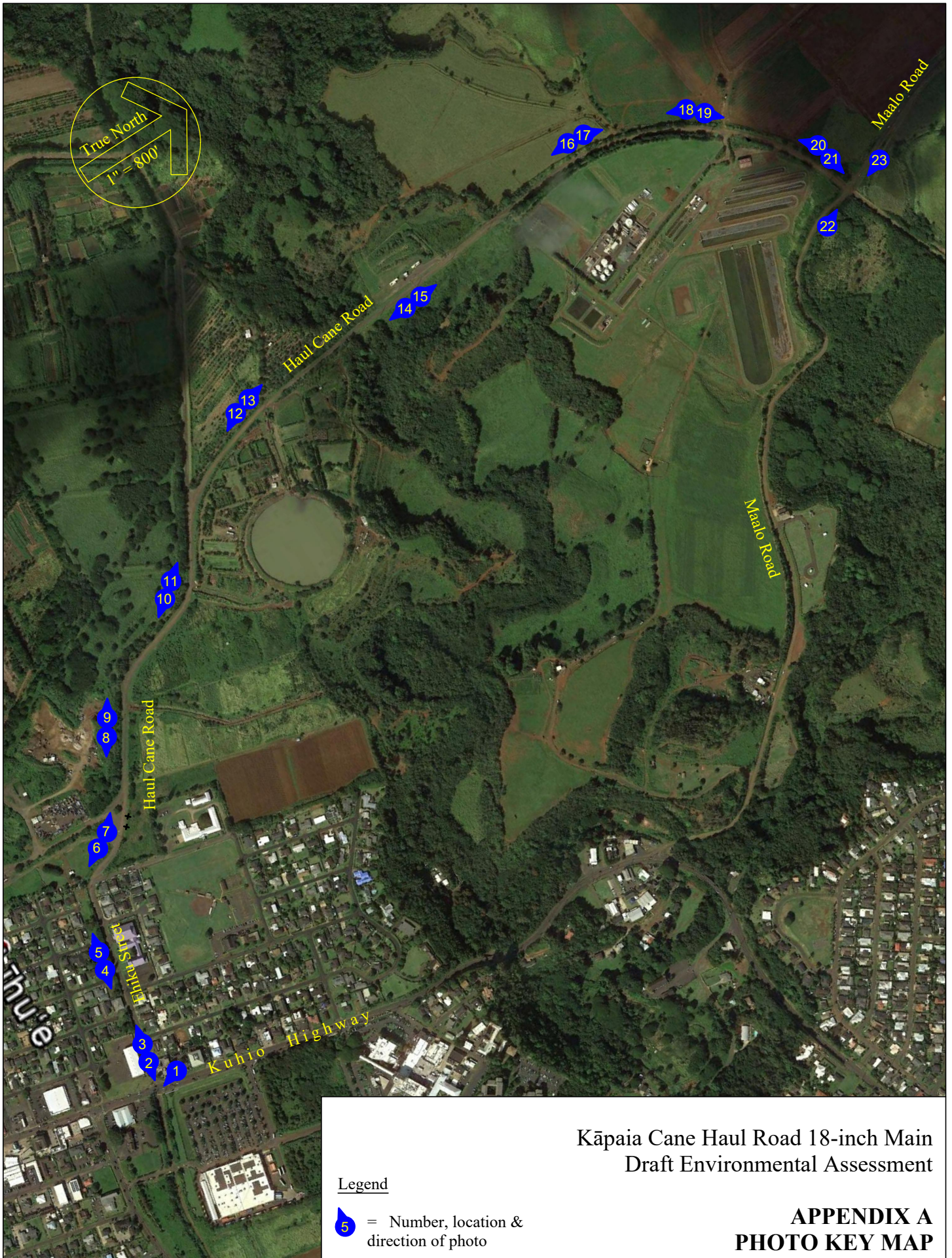
Table 3-21: (continued)
Inventory of Surface Water Resources

Unit Code	Unit Name	Area (mi ²)	No. of Diversions	No. of Gages	Active Gages	Interim IFS
KAUAI (continued)						
2039	Waikaea	7.13	2	9	0	HAR §13-169-45. Amended to include SCAP KA-396 on Waikaea and Konohiki Streams for streams are impacted by a pumped well (7/12/2006).
2040	Wailua	53.34	30	17	3	HAR §13-169-45
2041	Kawailoa	3.94	0	0	0	HAR §13-169-45
2042	Hanamaulu	11.65	4	1	0	HAR §13-169-45
2043	Lihue Airport	1.83	0	0	0	HAR §13-169-45
2044	Nawiliwili	6.40	3	0	0	HAR §13-169-45
2045	Puali	2.05	6	0	0	HAR §13-169-45
2046	Huleia	28.32	26	9	0	HAR §13-169-45
2047	Kipu Kai	3.04	1	0	0	HAR §13-169-45
2048	Mahaulepu	13.43	6	1	0	HAR §13-169-45
2049	Waikomo	9.12	11	0	0	HAR §13-169-45
2050	Aepo	2.58	5	0	0	HAR §13-169-45
2051	Lawai	9.73	11	1	0	HAR §13-169-45
2052	Kalaheo	6.56	9	0	0	HAR §13-169-45
2053	Wahiawa	7.34	1	0	0	HAR §13-169-45
2054	Hanapepe	27.09	9	12	1	HAR §13-169-45
2055	Kukamahu	3.21	0	0	0	HAR §13-169-45
2056	Kaunakani	3.09	0	0	0	HAR §13-169-45
2057	Mahinauli	8.78	1	0	0	HAR §13-169-45
2058	Aakukui	5.27	3	0	0	HAR §13-169-45
2059	Waipao	9.26	1	1	0	HAR §13-169-45
2060	Waimea	86.50	46	28	3	HAR §13-169-45
2061	Kapilimao	6.44	1	0	0	HAR §13-169-45
2062	Paua	5.10	0	0	0	HAR §13-169-45
2063	Hoea	16.64	1	0	0	HAR §13-169-45
2064	Niu	2.82	0	0	0	HAR §13-169-45
2065	Kaawaloa	7.50	0	0	0	HAR §13-169-45
2066	Nahomalu	17.63	1	1	0	HAR §13-169-45
2067	Kaulaula	2.55	0	0	0	HAR §13-169-45
2068	Haeleele	2.45	0	0	0	HAR §13-169-45
2069	Hikimoe	2.20	0	0	0	HAR §13-169-45
2070	Kaaweiki	2.15	0	0	0	HAR §13-169-45
2071	Kauhao	3.98	1	1	0	HAR §13-169-45
2072	Makaha	2.80	0	0	0	HAR §13-169-45
2073	Milolii	4.34	1	0	0	HAR §13-169-45
2074	Nualolo	2.83	0	0	0	HAR §13-169-45

EXHIBIT P:
Island of Kaua`i Registered Diversions
State of Hawai`i, Water Resource Protection Plan²⁵, June 2008

Kapaia Cane Haul Road 18-inch Main
Draft Environmental Assessment

APPENDIX A



Kāpaia Cane Haul Road 18-inch Main
Draft Environmental Assessment

Legend


5 = Number, location & direction of photo

**APPENDIX A
PHOTO KEY MAP**



Photo #1, Kuhio Highway and Ehiku Street Intersection, Proposed 18" Main to Connect to an Existing 16" Main

Legend

- 
 = Approximate location of proposed 18" main. Waterline to be buried underground unless otherwise noted.


- 
 = Approximate location of existing 16" main.



Photo #2, Ehiku Street facing towards Kuhio Highway



Photo #3, Ehiku Street nearby Kuhio Highway facing towards Haul Cane Road



Photo #4, Ehiku Street facing towards Kuhio Highway



Photo #5, Ehiku Street facing towards Haul Cane Road



Photo #6, The beginning of Haul Cane Road facing Ehiku Street



Photo #7, Beginning of Haul Cane Road facing the direction of Maalo Road



Photo #8, Haul Cane Road facing the direction of Ehiku Street



Photo #9, Haul Cane Road facing the direction of Maalo Road



Photo #10, Haul Cane Road facing the direction of Ehiku Street



Photo #11, Haul Cane Road facing the direction of Maalo Road



Photo #12, Haul Cane Road facing the direction of Ehiku Street



Photo #13, Haul Cane Road facing the direction of Maalo Road, Culvert Crossing



Photo #14, Haul Cane Road facing the direction of Ehiku Street



Photo #15, Haul Cane Road facing the direction of Maalo Road



Photo #16, Haul Cane Road facing the direction of Ehiku Street



Photo #17, Haul Cane Road facing the direction of Maalo Road



Photo #18, Haul Cane Road facing the direction of Ehiku Street



Photo #19, Haul Cane Road facing towards Maalo Road



Photo #20, Haul Cane Road facing towards Ehiku Street



Photo #21, End of Haul Cane Road facing intersection with Maalo Road



Photo #22, Maalo Road facing mauka towards intersection with Haul Cane Road



Photo #23, Maalo Road facing makai towards intersection with Haul Cane Road

Kapaia Cane Haul Road 18-inch Main
Draft Environmental Assessment

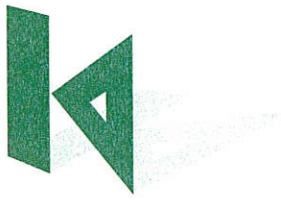
APPENDIX B

APPENDIX B – PRECONSULTATION CORRESPONDENCE

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Pre-Consultation Notice Distribution	Pre-Consultation Response Type	Appendix B Page No.
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<u>STATE OF HAWAII</u>		
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Representative James Tokioka	Phone Meeting	7-8
DOH, Environmental Health Program, Kauai Office	Letter	9-10
DOH, Environmental Planning Office	Letter	11-21
DOT, Kaua'i District Office, Highways Division	Letter / Plan Review	22-24
DLNR, Commission on Water Resources Management	Phone Meeting	25-26
DLNR, State Historic Preservation Division	Letter	27-30
DLNR, Aha Moku Council	Email	31-33
Office of Hawaiian Affairs, Compliance Specialist	None	34-35
Office of Hawaiian Affairs, Kauai Trustee	None	36-37
Department of Hawaiian Home Lands, Planning Office	Letter	38-48
Department of Education, Kauai District Office	None	49-50
<u>COUNTY OF KAUA'I</u>		
Office of the Mayor	Meeting	51-52
Kaua'i County Council, Council Chair Rapozo	Meeting	53-54
Kaua'i County Council, Council Vice Chair Kagawa	None	55-56
Kaua'i County Council, Councilmember Brun	Meeting	57-58
Kaua'i County Council, Councilmember Chock	Meeting	59-60
Kaua'i County Council, Councilmember Kaneshiro	Meeting	61-62
Kaua'i County Council, Councilmember Kawakami	Meeting	63-64
Kaua'i County Council, Councilmember Yukimura	Meeting	65-66
Planning Department, Planning Director	Meeting	67-68
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Pre-Consultation Notice Distribution	Pre-Consultation Response Type	Appendix B Page No.
Fire Department, Fire Chief & Staff	Meeting	77-78
Housing Agency, Housing Director	Meeting	79-80
<u>UTILITIES</u>		
Kaua'i Island Utility Company (KIUC)	Plan Review	NA
Hawaiian Telcom	Plan Review	NA
Spectrum Cable	Plan Review	NA
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Lihu'e Business Association	None	86-87
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<u>NEIGHBORS</u>		
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Luis residence	None	102-103
Costa residence	None	104-105
Calipjo residence	None	106-107
Dunn residence	None	108-109
Church of Jesus Christ of Latter-Day Saints	None	110-111
Pigao residence	None	112-113
Chan residence	None	114-115
Delgado residence	None	116-117
Honolulu Limited	None	118-119
Barklow residence	Letter	120-123



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Jennifer Dunn
Natural Resources Conservation Service
4334 Rice St # 104
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

The County of Kaua'i, Department of Water (KDOW) has identified your office as having jurisdiction or expertise in regards to the subject Draft Environmental Assessment (DEA). Kodani & Associates Engineers is preparing the subject DEA on behalf of KDOW and pursuant to Chapter 343, we are conducting the required pre-consultation. We respectfully request your advice and input on this matter.

The proposed project generally consists of an approximately 9,000 foot long, 18-inch diameter, potable water transmission main along the existing 'Ehiku Street and the Kapaia Cane Haul Road from Kūhiō Highway to Ma'alo Road. The proposed transmission main will connect to existing KDOW 16" diameter mains on each end. KDOW seeks to improve transmission capacity in the existing Puhi-Līhu'e-Hanama'ulu water system and as such the proposed project is contained in the Department's comprehensive master plan entitled *Water Plan 2020*. Please find the attached project location map for your reference.

We respectfully request a response from your agency within 30 calendar days from the date of receipt. If we do not receive any comments within the 30 calendar days, we will take this as a response of no comment. Should you have any questions or require additional information, please contact me by email at bill@kodani.com. Project comments may be mailed to our mailing address below or emailed to me at bill@kodani.com.

Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment
c: Department of Water with attachment

MEMO TO FILE

DATE: December 28, 2017

BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: U.S. Natural Resources Conservation Service

NOTE: No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Senator Ronald Kouchi
Hawai'i State Capital
415 S. Beretania St, Room 409
Honolulu, HI 96813

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

The County of Kaua'i, Department of Water (KDOW) has identified your office as having jurisdiction or expertise in regards to the subject Draft Environmental Assessment (DEA). Kodani & Associates Engineers is preparing the subject DEA on behalf of KDOW and pursuant to Chapter 343, we are conducting the required pre-consultation. We respectfully request your advice and input on this matter.

The proposed project generally consists of an approximately 9,000 foot long, 18-inch diameter, potable water transmission main along the existing 'Ehiku Street and the Kapaia Cane Haul Road from Kūhiō Highway to Ma'alo Road. The proposed transmission main will connect to existing KDOW 16" diameter mains on each end. KDOW seeks to improve transmission capacity in the existing Puhi-Līhu'e-Hanama'ulu water system and as such the proposed project is contained in the Department's comprehensive master plan entitled *Water Plan 2020*. Please find the attached project location map for your reference.

We respectfully request a response from your agency within 30 calendar days from the date of receipt. If we do not receive any comments within the 30 calendar days, we will take this as a response of no comment. Should you have any questions or require additional information, please contact me by email at bill@kodani.com. Project comments may be mailed to our mailing address below or emailed to me at bill@kodani.com.

Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment
c: Department of Water with attachment

MEMO TO FILE

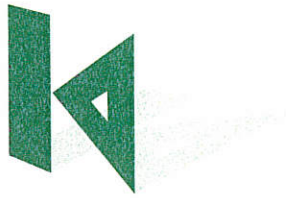
DATE: December 28, 2017

BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: State of Hawai`i, Senator Ronald Kouchi

NOTE: No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Representative James Tokioka
Hawai'i State Capital
416 S. Beretania St, Room 322
Honolulu, HI 96814

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

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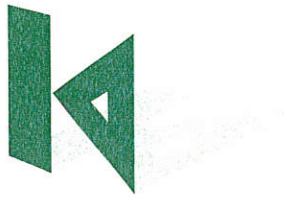
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Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

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KODANI & ASSOCIATES ENGINEERS, LLC

July 17, 2017

Representative James Tokioka
Hawai'i State Capitol
416 S. Beretania St., Room 322
Honolulu, HI 96814

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment
Hanamaulu, Kauai, Hawaii

Dear Representative Tokioka,

Thank you for your phone call on June 6, 2017 in response to the pre-consultation letter we sent to you. This letter serves as a formal acknowledgement of your response to us.

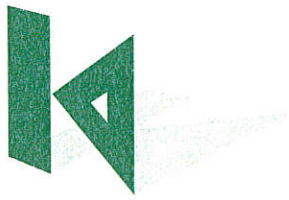
I appreciate the information you shared with us via phone, and thank you for your support in this project. We expect to publish the complete Draft Environmental Assessment (EA) in August 2017, at which time you may download the document from the State of Hawaii Office of Environmental Quality Control (OEQC) website at <http://health.hawaii.gov/oeqc/>. There is a 30-day public input period after the Draft EA is posted by the OEQC.

If you have any future questions or concerns regarding this project, please feel free to contact our office at (808)245-9591 or contact me directly via email at bill@kodani.com.

Sincerely,

William Eddy, PE
Vice President

c: Department of Water



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Gerald N. Takamura, Chief
Department of Health, Environmental Health Program Kauai
3040 Umi St
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

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Sincerely,

William Eddy, PE
Vice President

Attachment
c: Department of Water with attachment

MEMO TO FILE

DATE: December 28, 2017

BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: State of Hawai`i, Department of Health, Environmental Health
Program, Kaua`i Office (DOH Kaua`i)

NOTE: A telephone meeting with DOH Kaua`i staff was held on
February 2, 2017. The telephone meeting participants were
Ms. Lori Vetter and myself. Input from DOH Kaua`i staff was
received and incorporated, to the extent possible, in the Draft
EA.

No response has been received from the addressee to our May
26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Laura Leialoha Phillips McIntyre, Program Manager
Department of Health, Environmental Planning Office
P.O. Box 3378
Honolulu, HI 96801

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

The County of Kaua'i, Department of Water (KDOW) has identified your office as having jurisdiction or expertise in regards to the subject Draft Environmental Assessment (DEA). Kodani & Associates Engineers is preparing the subject DEA on behalf of KDOW and pursuant to Chapter 343, we are conducting the required pre-consultation. We respectfully request your advice and input on this matter.

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Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment

c: Department of Water with attachment



**STATE OF HAWAII
DEPARTMENT OF HEALTH**

P. O. BOX 3378
HONOLULU, HI 96801-3378

In reply, please refer to:
File:

EPO 17-135

June 22, 2017

Mr. Bill Kodani
Kodani & Associates Engineers, LLC
3126 Akahi Street
Lihue, Hawaii 96766
Email: bill@kodani.com

Dear Mr. Kodani:

**SUBJECT: Pre-Consultation Draft Environmental Assessment (PC DEA) for Kapaia Cane Haul Road
18-inch Main, Hanamaulu, Lihue, Kauai**

The Department of Health (DOH), Environmental Planning Office (EPO), acknowledges receipt of your PC DEA to our office on May 31, 2017.

We understand from the PC DEA that *"The proposed project generally consists of an approximately 9,000 foot long, 18-inch diameter, potable water transmission main along the existing 'Ehiku Street and the Kapaia Cane Haul Road from Kuhio Highway to Ma'alo Road. The proposed transmission main will connect to existing KDOW 16" diameter mains on each end."*

Hawaii's environmental review laws require Environmental Assessments (EAs) and Environmental Impact Statements (EISs) to consider health in the discussion and the mitigation measures to reduce negative impacts. In its definition of 'impacts,' §11-200-2, Hawaii Administrative Rules (HAR) includes health effects, whether primary (direct), secondary (indirect), or cumulative. Further, §11-200-12(b)(5), HAR, lists public health as one of the criteria for determining whether an action may have a significant impact on the environment.

In the development and implementation of all projects, EPO strongly recommends regular review of State and Federal environmental health land use guidance. State standard comments and available strategies to support sustainable and healthy design are provided at: <http://health.hawaii.gov/epo/landuse>. Projects are required to adhere to all applicable standard comments. EPO has recently updated the environmental Geographic Information System (GIS) website page. It now compiles various maps and viewers from our environmental health programs. The eGIS website page is continually updated so please visit it regularly at: <http://health.hawaii.gov/epo/egis>

EPO also encourages you to examine and utilize the Hawaii Environmental Health Portal at: <https://eha-cloud.doh.hawaii.gov>. This site provides links to our e-Permitting Portal, Environmental Health Warehouse, Groundwater Contamination Viewer, Hawaii Emergency Response Exchange, Hawaii State and Local Emission Inventory System, Water Pollution Control Viewer, Water Quality Data, Warnings, Advisories and Postings.

We suggest you review the requirements of the Clean Water Branch (Hawaii Administrative Rules {HAR}, Chapter 11-54-1.1, -3, 4-8) and/or the National Pollutant Discharge Elimination System (NPDES) permit (HAR, Chapter 11-55) at: <http://health.hawaii.gov/cwb>. If you have any questions, please contact the Clean Water Branch (CWB), Engineering Section at (808) 586-4309 or cleanwaterbranch@doh.hawaii.gov. If your project involves waters of the U.S., it is highly recommended that you contact the Army Corps of Engineers, Regulatory Branch at: (808) 835-4303.

Mr. Bill Kodani
Page 2
June 22, 2017

Any construction waste generated by the project needs to be disposed of at a solid waste disposal facility that complies with the applicable provisions (HAR, Chapter 11-58.1 "Solid Waste Management Control"). The open burning of any of these wastes, on or off site, is strictly prohibited. You may wish you review the C&D Waste Management Guide at: <http://health.hawaii.gov/shwb/files/2016/05/constdem16.pdf> Additional information is accessible at: <http://health.hawaii.gov/shwb>. For specific questions call (808) 586-4226.

You may also wish to review the draft Office of Environmental Quality Control (OEQC) viewer at: <http://eha-web.doh.hawaii.gov/oeqc-viewer>. This viewer geographically shows where some previous Hawaii Environmental Policy Act (HEPA) {Hawaii Revised Statutes, Chapter 343} documents have been prepared.

To better protect public health and the environment, the U.S. Environmental Protection Agency (EPA) has developed a new environmental justice (EJ) mapping and screening tool called EJSCREEN. It is based on nationally consistent data and combines environmental and demographic indicators in maps and reports. EPO encourages you to explore, launch and utilize this powerful tool in planning your project. The EPA EJSCREEN tool is available at: <http://www.epa.gov/ejscreen>.

We request that you utilize all this information on your proposed project to increase sustainable, innovative, inspirational, transparent and healthy design. Thank you for the opportunity to comment.

Mahalo nui loa,



Laura Leialoha Phillips McIntyre, AICP
Program Manager, Environmental Planning Office
LM:nn

Attachment 1: Environmental Health Management Web App Snipit of Project Area: <http://health.hawaii.gov/epo/egis>

Attachment 2: Clean Water Branch: Water Quality Standards Map - Kauai

Attachment 3: Historic Sugarcane Map of Project Area

Attachment 4: OEQC viewer (of some past EA's, EIS's in area)

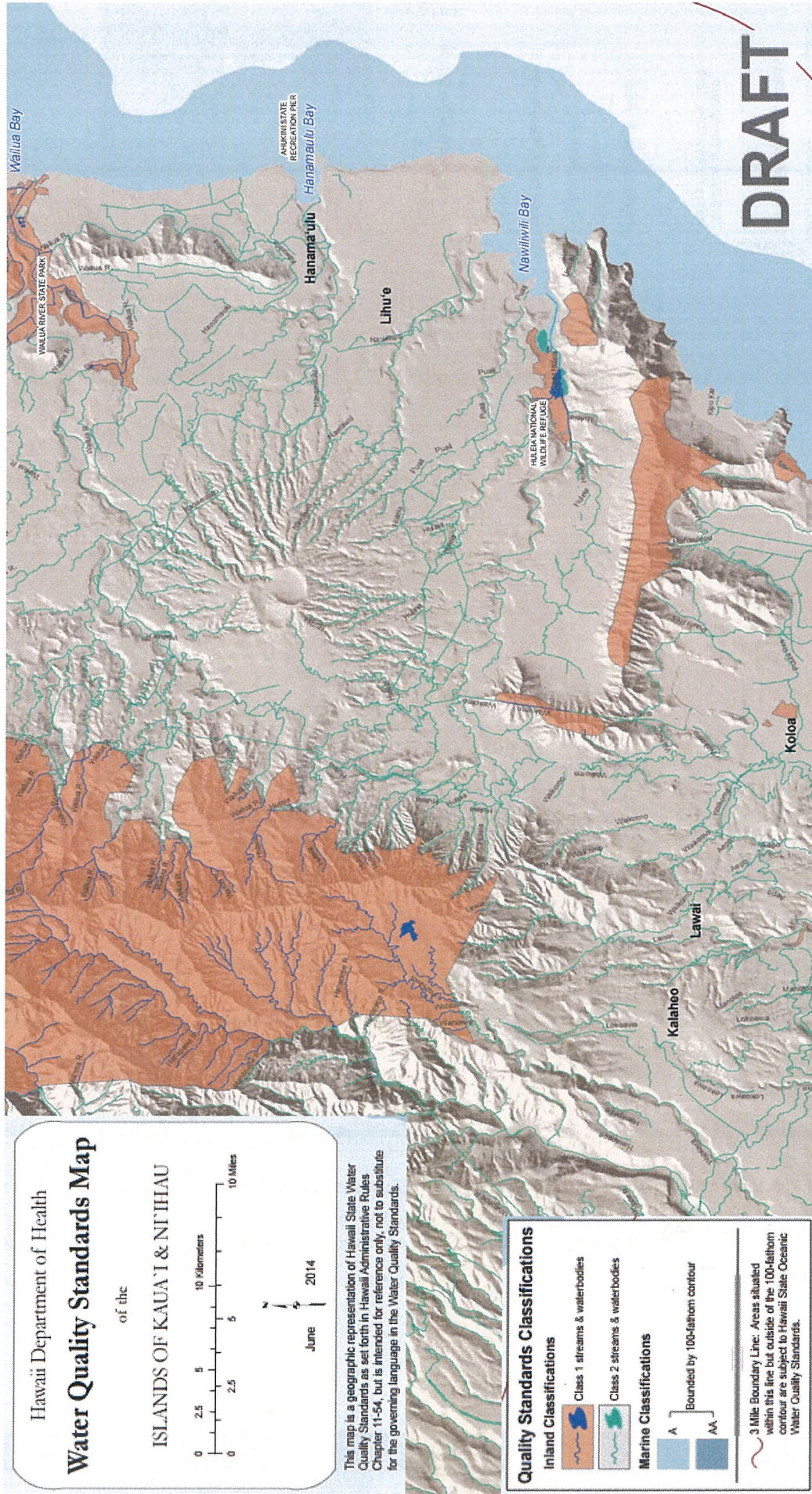
Attachment 5: U.S. EPA EJSCREEN Report for Project Area

c: DOH: SDWB, DHO Kauai, CWB {via email only}

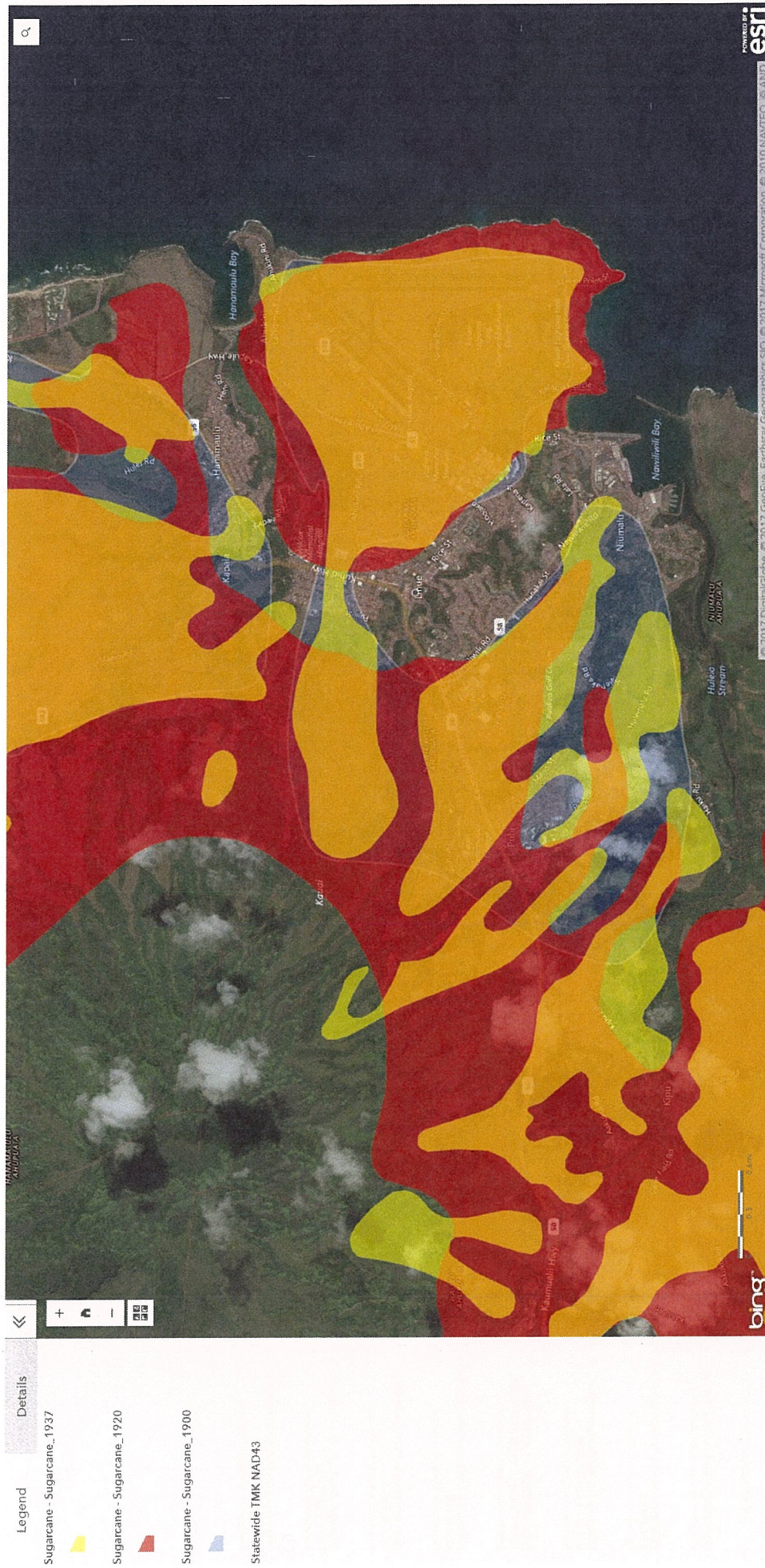
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Attachment 4: OEQC viewer (of some past EA's, EIS's in area)

OEQC Viewer

Hybrid

Map data ©2017 Google Imagery ©2017 DigitalGlobe Terms of Use Reports a map error

8 sites found

Q Lihue

Results Filter

Show sites with no location

<p>LIHUE AIRPORT IMPROVEMENTS (FEIS) Environmental Impact Statement (Agency)</p>
<p>Photovoltaic Energy System Lihue Airport (FEA-FONSI) Environmental Assessment (Agency)</p>
<p>Lihue Civic Center Site Improvements Master Plan (FEA-FONSI) Environmental Assessment (Agency)</p>
<p>LIHUE EMERGENCY SHELTER AND TRANSITIONAL HOUSING (FEA-FONSI) Environmental Assessment (Applicant)</p>
<p>Photovoltaic Energy System Lihue Airport (DEA-AFNSI) Environmental Assessment (Agency)</p>
<p>Rice Camp Parcels Affordable Housing (DEA-AFNSI) Environmental Assessment (Agency)</p>
<p>Affordable Housing for Rice Camp Parcels Lihue (FEA-FONSI) Environmental Assessment (Agency)</p>
<p>KAUAI LAGOONS RESORT GENERAL PLAN AMENDMENT (FEA-FONSI) Environmental Assessment (Applicant)</p>

Attachment 5: U.S. EPA EJSCREEN Report for Project Area



EJSCREEN Report (Version 2016)

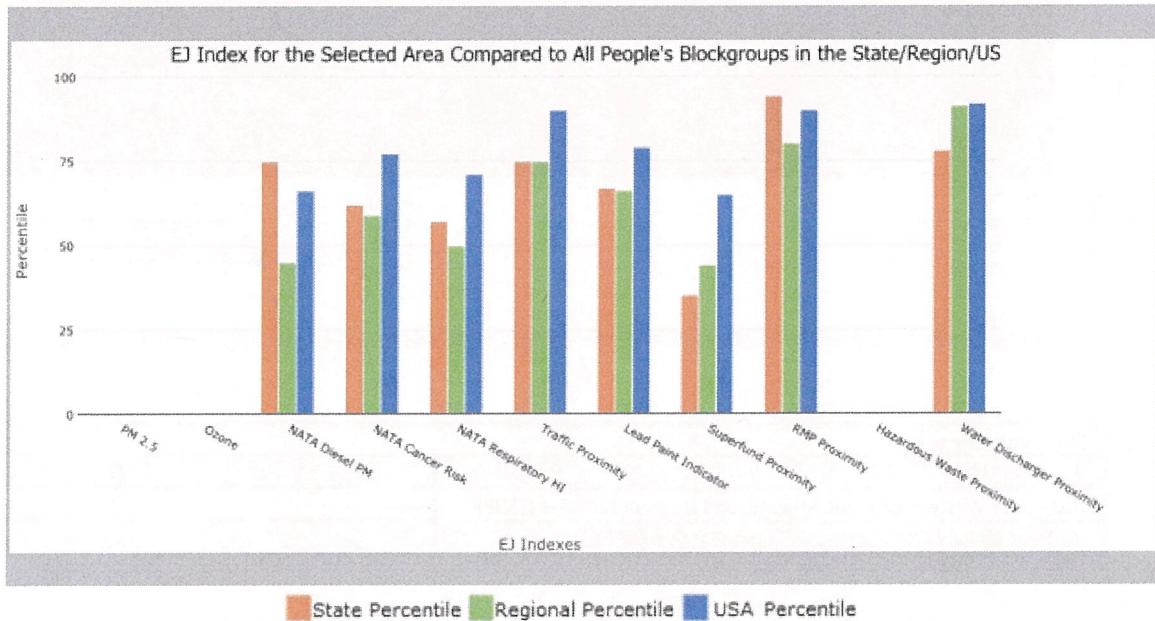


1 mile Ring Centered at 21.997065,-159.376823, HAWAII, EPA Region 9

Approximate Population: 1,382

Input Area (sq. miles): 3.14

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	N/A	N/A	N/A
EJ Index for Ozone	N/A	N/A	N/A
EJ Index for NATA [*] Diesel PM	75	45	66
EJ Index for NATA [*] Air Toxics Cancer Risk	62	59	77
EJ Index for NATA [*] Respiratory Hazard Index	57	50	71
EJ Index for Traffic Proximity and Volume	75	75	90
EJ Index for Lead Paint Indicator	67	66	79
EJ Index for Superfund Proximity	35	44	65
EJ Index for RMP Proximity	94	80	90
EJ Index for Hazardous Waste Proximity [*]	N/A	N/A	N/A
EJ Index for Water Discharger Proximity	78	91	92



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

June 08, 2017

1/3

1 mile Ring Centered at 21.997065,-159.376823, HAWAII, EPA Region 9

Approximate Population: 1,382

Input Area (sq. miles): 3.14



Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0
National Pollutant Discharge Elimination System (NPDES)	0

EJSCREEN Report (Version 2016)



1 mile Ring Centered at 21.997065,-159.376823, HAWAII, EPA Region 9

Approximate Population: 1,382

Input Area (sq. miles): 3.14

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in $\mu\text{g}/\text{m}^3$)	N/A	N/A	N/A	9.37	N/A	9.32	N/A
Ozone (ppb)	N/A	N/A	N/A	51	N/A	47.4	N/A
NATA* Diesel PM ($\mu\text{g}/\text{m}^3$)	0.13	0.149	68	0.978	<50th	0.937	<50th
NATA* Cancer Risk (lifetime risk per million)	26	34	19	43	<50th	40	<50th
NATA* Respiratory Hazard Index	0.66	1	26	2	<50th	1.8	<50th
Traffic Proximity and Volume (daily traffic count/distance to road)	600	990	70	1100	62	590	80
Lead Paint Indicator (% Pre-1960 Housing)	0.13	0.16	56	0.24	49	0.3	40
Superfund Proximity (site count/km distance)	0	0.098	29	0.15	13	0.13	16
RMP Proximity (facility count/km distance)	0.67	0.19	93	0.57	76	0.43	81
Hazardous Waste Proximity* (facility count/km distance)	N/A	0.14	N/A	0.14	N/A	0.11	N/A
Water Discharger Proximity (facility count/km distance)	0.39	0.34	70	0.2	88	0.31	80
Demographic Indicators							
Demographic Index	61%	52%	76	47%	69	36%	82
Minority Population	86%	77%	59	58%	77	37%	88
Low Income Population	36%	26%	72	36%	53	35%	56
Linguistically Isolated Population	8%	6%	72	9%	57	5%	79
Population With Less Than High School Education	20%	9%	88	17%	63	14%	74
Population Under 5 years of age	4%	6%	30	7%	30	6%	32
Population over 64 years of age	17%	15%	61	13%	77	14%	72

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: <https://www.epa.gov/national-air-toxics-assessment>.

+ The hazardous waste environmental indicator and the corresponding EJ index will appear as N/A if there are no hazardous waste facilities within 50 km of a selected location.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

June 08, 2017

3/3



KODANI & ASSOCIATES ENGINEERS, LLC

July 17, 2017

Ms. Laura Leialoha Phillips McIntyre, AICP Program Manager
Department of Health
Environmental Planning Office
P.O. Box 3378
Honolulu, HI 96801

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment
Hanamaulu, Kauai, Hawaii

Dear Ms. McIntyre,

Thank you for your timely response to our letter. This letter confirms that we have received your response and comments regarding this project.

We will utilize and incorporate, to the extent possible, the resources you have provided for us and take measures to insure the health and safety of the community and the environment.

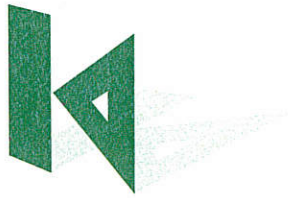
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If there are future questions or concerns regarding this project, please feel free to contact our office at (808)245-9591 or contact me directly at bill@kodani.com.

Sincerely,

William Eddy, PE
Vice President

c: Department of Water



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Larry Dill, District Engineer
Department of Transportation, Kaua'i District Office, Highways Division
1720 Haleukana Street
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

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Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment
c: Department of Water with attachment

DAVID Y. IGE
GOVERNOR



FORD N. FUCHIGAMI
DIRECTOR

Deputy Directors
JADE T. BUTAY
ROSS M. HIGASHI
EDWIN H. SNIFFEN
DARRELL T. YOUNG

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KAUAI DISTRICT
1720 HALEUKANA STREET
LIHUE, HAWAII 96766

IN REPLY REFER TO:

HWY-K 4.170244

June 14, 2017

RECEIVED

JUN 20 2017

Mr. Clyde Kodani
Kodani and Associates Engineering
3126 Akahi Street
Lihue, Hawaii 96766

Dear Mr. Kodani:

Subject: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project PLH-35B
Hanamaulu, Lihue, Kauai, Hawaii

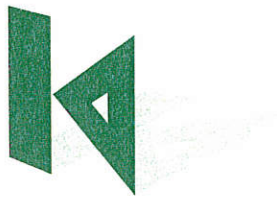
Thank you for your May 26, 2017 request for pre-consultation on the subject proposed project. For the subject project our primary concern is the work with the Hawaii Department of Transportation State Right of Way. Per our previous discussions and correspondence, work performed within the State Highway Right of Way will require a Permit to Perform Work Within the State Right of Way. In regards to the pavement disturbance from this project, please see our previous review comments on the proposed project.

Thank you again for the opportunity to provide comments on the proposed project. Please contact Raymond McCormick at 808-241-3015 if you have further questions or concerns regarding our comments or work within the State Right of Way.

Sincerely,

A handwritten signature in blue ink, appearing to read "LARRY DILL".

LARRY DILL, P.E.
District Engineer



KODANI & ASSOCIATES ENGINEERS, LLC

July 17, 2017

Mr. Larry Dill, P.E. District Engineer
Department of Transportation
Kauai District Office
Highways Division
1720 Haleukana Street
Lihue, HI 96766

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment
Hanamaulu, Kauai, Hawaii

Dear Mr. Dill,

Thank you for your letter dated June 14, 2017. This letter confirms that we have received your response and comments regarding this project.

We will be sure to include listing of a Permit to Perform Work within the State Right of Way in the subject Draft Environmental Assessment. Furthermore, we will continue to work with your staff to address all construction plan review comments.

We expect to publish the complete Draft Environmental Assessment (EA) in August 2017, at which time you may download the document from the State of Hawaii Office of Environmental Quality Control (OEQC) website at <http://health.hawaii.gov/oeqc/>. There is a 30-day public input period after the Draft EA is posted by the OEQC.

If you have any further questions or concerns regarding this project, please feel free to contact our office at (808)245-9591 or contact me directly at bill@kodani.com.

Sincerely,

William Eddy, PE
Vice President

c: Department of Water



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Dean Uyeno
Department of Land & Natural Resources, Commission on Water Resources Management
Kalanimoku Building, 1151 Punchbowl St.
Honolulu, HI 96813

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

The County of Kaua'i, Department of Water (KDOW) has identified your office as having jurisdiction or expertise in regards to the subject Draft Environmental Assessment (DEA). Kodani & Associates Engineers is preparing the subject DEA on behalf of KDOW and pursuant to Chapter 343, we are conducting the required pre-consultation. We respectfully request your advice and input on this matter.

The proposed project generally consists of an approximately 9,000 foot long, 18-inch diameter, potable water transmission main along the existing 'Ehiku Street and the Kapaia Cane Haul Road from Kūhiō Highway to Ma'alo Road. The proposed transmission main will connect to existing KDOW 16" diameter mains on each end. KDOW seeks to improve transmission capacity in the existing Puhī-Līhu'e-Hanama'ulu water system and as such the proposed project is contained in the Department's comprehensive master plan entitled *Water Plan 2020*. Please find the attached project location map for your reference.

We respectfully request a response from your agency within 30 calendar days from the date of receipt. If we do not receive any comments within the 30 calendar days, we will take this as a response of no comment. Should you have any questions or require additional information, please contact me by email at bill@kodani.com. Project comments may be mailed to our mailing address below or emailed to me at bill@kodani.com.

Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment
c: Department of Water with attachment

MEMO TO FILE

DATE: December 28, 2017

BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: State of Hawai`i, Department of Land and Natural Resources,
Commission on Water Resource Management (CWRM)

NOTE: A telephone meeting with CWRM was held on February 22, 2017. The telephone meeting participants were Mr. Dean Uyeno and Ms. Rebecca Alakai of CWRM and myself. Input from CWRM was received and incorporated, to the extent possible, in the Draft EA.

No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Stephanie Hacker, Archaeologist
Department of Land & Natural Resources, State Historic Preservation Division
Kakuhihewa Building, 601 Kamokila Blvd., Suite 555
Kapolei, HI 96707

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

The County of Kaua'i, Department of Water (KDOW) has identified your office as having jurisdiction or expertise in regards to the subject Draft Environmental Assessment (DEA). Kodani & Associates Engineers is preparing the subject DEA on behalf of KDOW and pursuant to Chapter 343, we are conducting the required pre-consultation. We respectfully request your advice and input on this matter.

The proposed project generally consists of an approximately 9,000 foot long, 18-inch diameter, potable water transmission main along the existing 'Ehiku Street and the Kapaia Cane Haul Road from Kūhiō Highway to Ma'alo Road. The proposed transmission main will connect to existing KDOW 16" diameter mains on each end. KDOW seeks to improve transmission capacity in the existing Puhī-Līhu'e-Hanama'ulu water system and as such the proposed project is contained in the Department's comprehensive master plan entitled *Water Plan 2020*. Please find the attached project location map for your reference.

We respectfully request a response from your agency within 30 calendar days from the date of receipt. If we do not receive any comments within the 30 calendar days, we will take this as a response of no comment. Should you have any questions or require additional information, please contact me by email at bill@kodani.com. Project comments may be mailed to our mailing address below or emailed to me at bill@kodani.com.

Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment
c: Department of Water with attachment

July 11, 2017

Keith Aoki, P.E.
Department of Water, County of Kauai
4398 Pua Loke Street
Līhu‘i, Kaua‘i 96766
kaoki@kauaiwater.org

IN REPLY REFER TO:
Log No. 2017.01148
Doc No. 1707GC04
Archaeology

Dear Mr. Aoki:

**SUBJECT: Chapter 6E-8 Historic Preservation Review
Pre-Consultation for a Draft Environmental Review
Kāpaia Cane Haul Road 18-Inch Main
Hanama‘ulu and Kalapaki Ahupua‘a, Puna District, Island of Kaua‘i
TMK: (4) 3-8-002, 003, 007 and 015**

Thank you for your submittal requesting comments in anticipation for preparing a draft Environmental Assessment (EA). The owner, County of Kaua‘i (COK), Department of Water (DOW), proposes to install an approximately 9,000-ft. long, 18-inch diameter, potable water transmission main along ‘Ehiku Street and the Kapaia Cane Haul Road from Kūhiō Highway to Ma‘aloa Road. The proposal includes connecting to the existing 16-inch mains on either end. The purpose of the project is to improve transmission capacity in the existing Puhi-Līhu‘e-Hanama‘ulu water systems.

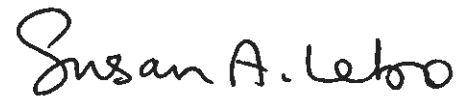
SHPD’s review at this time is general and is based on historic reports, maps and aerial photographs maintained at the State Historic Preservation Division office in Kapolei, O‘ahu. A review of SHPD’s records indicates that an archaeological inventory survey (AIS) has been conducted within proximity of the proposed project. Due to negative findings, the report was submitted as an archaeological assessment (O’Day and Linde 2014). However, SHPD has no record of an AIS being completed within the proposed project area.

SHPD has insufficient information to make a determination for the proposed project and its effect to potential historic properties. The **SHPD requests the following information:**

- (1) Narrative description of the proposed project, including total area in acres and nature of any land alteration, new construction, demolition or modification of existing structures;
- (2) TMK map showing the full extent of the project area;
- (3) Description and photographs of current vegetation cover and condition of the project area, including structures, roads, wall or other features within the project area;
- (4) Summary of land use history, such as previous intensive cultivation, grubbing or grading; and
- (5) Copies or dates of previously approved permits, survey reports, and/or prior SHPD review letters that pertain to the present project area.

Please contact me at (808) 692-8019 or at Susan.A.Lebo@hawaii.gov if you have any questions regarding this letter.

Aloha,

A handwritten signature in black ink that reads "Susan A. Lebo". The signature is written in a cursive, flowing style.

Susan A. Lebo, PhD
Archaeology Branch Chief

cc: Bryan Wienand, COK-DOW (bwienand@kauaiwater.org)
William Eddy, Kodani & Associates Engineers, LLC (bill@kodani.com)



KODANI & ASSOCIATES ENGINEERS, LLC

July 17, 2017

Susan A. Lebo, PhD.
Archaeology Branch Chief
Department of Land and Natural Resources
State Historic Preservation Division
601 Kamokila Blvd, Suite 555
Kapolei, HI 96707

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment
Log No. 2017.01148
Doc No. 1707GC04
Hanamaulu, Kauai, Hawaii

Dear Dr. Lebo,

Thank you for your letter dated July 11, 2017. This letter confirms that we have received your response and comments regarding this project. We will incorporate, to the extent possible, the information you have requested to allow the State Historic Preservation Division (SHPD) to make a determination on the project and its effects on potential historic properties.

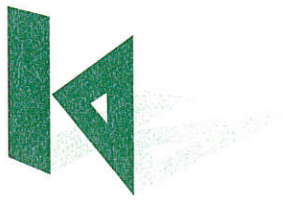
We expect to publish the complete Draft Environmental Assessment (EA) in August 2017, at which time you may download the document from the State of Hawaii Office of Environmental Quality Control (OEQC) website at <http://health.hawaii.gov/oeqc/>. There is a 30-day public input period after the Draft EA is posted by the OEQC.

If you have any further questions or concerns regarding this project, please feel free to contact our office at (808)245-9591 or contact me directly at bill@kodani.com.

Sincerely,

William Eddy, PE
Vice President

c: Department of Water



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Kaliko Santos
Department of Land & Natural Resources, Aha Moku Council
Kalanimoku Building, 1151 Punchbowl St.
Honolulu, HI 96813

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

The County of Kaua'i, Department of Water (KDOW) has identified your office as having jurisdiction or expertise in regards to the subject Draft Environmental Assessment (DEA). Kodani & Associates Engineers is preparing the subject DEA on behalf of KDOW and pursuant to Chapter 343, we are conducting the required pre-consultation. We respectfully request your advice and input on this matter.

The proposed project generally consists of an approximately 9,000 foot long, 18-inch diameter, potable water transmission main along the existing 'Ehiku Street and the Kapaia Cane Haul Road from Kūhiō Highway to Ma'alo Road. The proposed transmission main will connect to existing KDOW 16" diameter mains on each end. KDOW seeks to improve transmission capacity in the existing Puhī-Līhu'e-Hanama'ulu water system and as such the proposed project is contained in the Department's comprehensive master plan entitled *Water Plan 2020*. Please find the attached project location map for your reference.

We respectfully request a response from your agency within 30 calendar days from the date of receipt. If we do not receive any comments within the 30 calendar days, we will take this as a response of no comment. Should you have any questions or require additional information, please contact me by email at bill@kodani.com. Project comments may be mailed to our mailing address below or emailed to me at bill@kodani.com.

Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment
c: Department of Water with attachment

bill eddy

From: Kaliko <kaliko08@gmail.com>
Sent: Wednesday, June 07, 2017 12:13 PM
To: Willilam Eddy, PE
Subject: Kapaia Cane Haul Road 18-Inch Main

Aloha Mr. Eddy,

Mahalo for letting the Puna Moku / Aha Moku comment on this project.

In consulting with members of Puna Moku/Aha Moku - Manokalanipo, the general area of this project may have scattered remnants of Lihue Plantation structures alongside the road, including ditches, culverts, sluice gates, bridge and a large water filtration facility.

With the general information provided, pre-contact sites, including iwi kupuna, are not expected. If the present construction has adverse effects to the historic properties, mitigation in the form of documenting the adverse effects to these historic properties would be appreciated.

We also favor an archaeological monitoring plan if, and only if, there is a potential for adverse effects to any historic properties especially since ground disturbance at such a depth to accommodate this large water main.

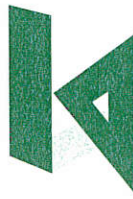
We would also like to request that we be kept abreast of this project.

Mahalo,

D. Kaliko Santos
Puna Moku
Aha Moku - Manokalanipo



Virus-free. www.avg.com



KODANI & ASSOCIATES ENGINEERS, LLC

July 17, 2017

Ms. Kaliko Santos
Department of Land & Natural Resources
Aha Moku Council
Kalanimoku Building
1151 Punchbowl Street
Honolulu, HI 96813

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment
Hanamaulu, Kauai, Hawaii

Dear Ms. Santos,

Thank you for your timely response to our letter in your email dated June 12, 2017. This letter confirms that we have received your response and comments regarding this project.

We have indeed observed remnants of the Lihue Plantation infrastructure along the proposed pipeline route. Some of the infrastructure is functional and some is not. To the best of our knowledge, the functional infrastructure within the project area includes the road (which we refer to as Kapaia Cane Haul Road), three (3) culverts that allow three (3) ditches to cross the road and several sluice gates. There is also PVC irrigation piping and valves that we believe dates to the 1970s, much of which is still functional and utilized by various agricultural operations in the area.

We are in consultation with the State Historic Preservation Division (SHPD) in regards to the need for an Archaeological Assessment and also an Archaeological Monitoring Plan. We are relying on SHPD's expertise to assess the potential for adverse effects on historical properties in the project area. The relatively long and narrow project area would be challenging to conduct a thorough Archaeological Assessment, and an Archaeological Monitoring Plan may be better suited.

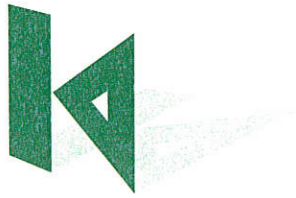
We expect to publish the complete Draft Environmental Assessment (EA) in August 2017, at which time you may download the document from the State of Hawaii Office of Environmental Quality Control (OEQC) website at <http://health.hawaii.gov/oeqc/>. There is a 30-day public input period after the Draft EA is posted by the OEQC.

If you have any further questions or concerns regarding this project, please feel free to contact our office at (808) 245-9591 or contact me directly at bill@kodani.com.

Sincerely,

William Eddy, PE
Vice President

c: Department of Water



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Jerome Yasuhara, Compliance Specialist
Office of Hawaiian Affairs
560 N. Nimitz Highway, Suite 200
Honolulu, HI 96817

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

The County of Kaua'i, Department of Water (KDOW) has identified your office as having jurisdiction or expertise in regards to the subject Draft Environmental Assessment (DEA). Kodani & Associates Engineers is preparing the subject DEA on behalf of KDOW and pursuant to Chapter 343, we are conducting the required pre-consultation. We respectfully request your advice and input on this matter.

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We respectfully request a response from your agency within 30 calendar days from the date of receipt. If we do not receive any comments within the 30 calendar days, we will take this as a response of no comment. Should you have any questions or require additional information, please contact me by email at bill@kodani.com. Project comments may be mailed to our mailing address below or emailed to me at bill@kodani.com.

Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment
c: Department of Water with attachment

MEMO TO FILE

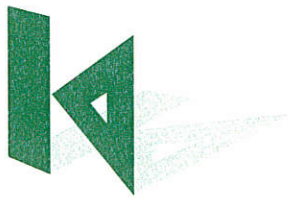
DATE: December 28, 2017

BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: State of Hawai`i, Office of Hawaiian Affairs, Compliance
Specialist

NOTE: No response has been received from the addressee to our May
26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Dan Ahuna, Kauai Trustee
Office of Hawaiian Affairs
4405 Kukui Grove St. Suite 103
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

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Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment

c: Department of Water with attachment

MEMO TO FILE

DATE: December 28, 2017

BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: State of Hawai`i, Office of Hawaiian Affairs, Kaua`i Trustee

NOTE: No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Jobie Masagatani
Department of Hawaiian Home Lands, Planning Office
P.O. Box 1879
Honolulu, HI 96805

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

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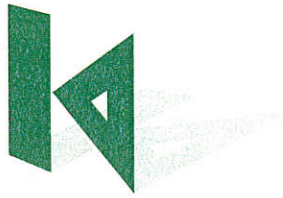
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Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment
c: Department of Water with attachment



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Kaleo Manuel
Department of Hawaiian Home Lands, Planning Office
P.O. Box 1879
Honolulu, HI 96805

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

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Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment
c: Department of Water with attachment

DAVID Y. IGE
GOVERNOR
STATE OF HAWAII



JOBIE M. K. MASAGATANI
CHAIRMAN
HAWAIIAN HOMES COMMISSION

SHAN S. TSUTSUI
LT. GOVERNOR
STATE OF HAWAII

WILLIAM J. AHLA, JR.
DEPUTY TO THE CHAIRMAN

**STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS**

P. O. BOX 1879
HONOLULU, HAWAII 96805

June 30, 2017

William Eddy, Vice President
Kodani & Associates Engineers, LLC.
3126 Akahi Street
Līhu'e, Hawai'i 96766

Dear Mr. Eddy:

**Subject: Pre-Consultation for Draft Environmental
Assessment: Kāpaia Cane Haul Road 18-inch Main,
Water Plan 2020 Project No. PLH-35B, Hanamā'ulu,
Līhu'e, Kaua'i, Hawai'i.**

Mahalo nui for requesting comments from the Department of Hawaiian Home Lands' (DHHL) on the County of Kaua'i, Department of Water's (KDOW) Draft Environmental Assessment for Kāpaia Cane Haul Road 18-inch Main, Water Plan 2020 Project No. PLH-35B, Hanamā'ulu, Līhu'e, Kaua'i, pursuant to your letter dated May 26, 2017. DHHL appreciates KDOW's withdrawal of the Anticipated Finding of No Significant Impact and believes a full environmental impact statement (EIS) should be prepared for the proposed action.

Background / Basis for Comments

DHHL assesses its interests in water development and management by considering its legal rights, duties, and privileges related to water and its projected needs for water resources, including surface water. DHHL takes these interests into account when asked to review state administrative actions that may affect its interests. DHHL's specific water needs are determined primarily based on its planning system documents.

DHHL utilizes a three-tiered planning system to guide development and management of its land holdings for the benefit of current and future beneficiaries. The planning system includes an over-arching General Plan, a second tier of Strategic Program Plans and Island Plans (which includes Water Policy Plan

Mr. William Eddy
June 30, 2017
Page 2

(WPP)),¹ and a third tier of more specific Regional and Development Plans. These plans are available on the Planning Office pages of the DHHL website.

Comment #1: The DEA should assess impacts on DHHL water demands as stated in the State Water Projects Plan.

DHHL holds over 20,565 acres on the island of Kaua'i. DHHL, Kaua'i Island Plan, at 2-1 (updated Jun. 4, 2004) (KIP). DHHL has planned uses for 526 acres in Wailua, which is located nearby to the proposed project area. DHHL, Wailua Regional Plan, at 9 (Dec. 2009). The residential Wailua community project is the first priority project of DHHL's KIP. The Wailua tract includes 640 residential lots (216 acres), 47 acres of commercial lands, 20 acres of community use lands, 92 acres of Special District lands, 25 agricultural homesteads (99 acres), and 52 acres of General Agricultural lands. Wailua Regional Plan at 9; KIP at 10-3.

Currently, KDOW's water system services DHHL's Wailua lands. However, due to the current shortage in water supply, KDOW cannot provide water for DHHL's future planned developments in Wailua. Wailua Regional Plan at 16. In May 2017, the State Commission on Water Resources Management (CWRM) accepted the final report of the DHHL update to the State Water Projects Plan for the projected water demands of DHHL's planned projects (SWPP).² By 2031, DHHL will require 0.7075 mgd potable water and 0.3366 mgd non-potable water for its Wailua developments. SWPP at 4-15. However, these demands do not account for DHHL beneficiaries' proposed lo'i kalo uses at the Wailua tract. Wailua Regional Plan at 26. Lo'i kalo agricultural uses could add an additional 5 mgd to future nonpotable demands.³

The DEA should assess all potential direct, secondary, and

¹ See Hawaiian Homes Commission Water Policy Plan, adopted July 22, 2014 available at: <http://dhhl.hawaii.gov/wp-content/uploads/2013/09/HHC-Water-Policy-Plan-140722.pdf>.

² Dep't of Land and Natural Resources, State of Hawai'i, Department of Hawaiian Home Lands State Water Projects Plan Update, Hawai'i Water Plan, (May 2017) available at: <http://files.hawaii.gov/dlnr/cwrm/planning/swpp2017.pdf>.

³ The conservative estimated water requirement for lo'i kalo is 150,000 gpd per acre. See Stephen B. Gingerich, Chiu W. Yeung, Tracy-Joy N. Ibarra, and John A. Engott, "Water use in wetland kalo cultivation in Hawai'i," USGS Open File Rpt. No. 2007-1157 (2007) available at: <http://pubs.usgs.gov/of/2007/1157/>.

Mr. William Eddy
June 30, 2017
Page 3

cumulative impacts on DHHL's planned uses of Wailua surface water as described in the SWPP and further consider potential lo'i kalo uses of DHHL lands.

Comment #2: *The DEA should include assessment of the secondary and cumulative impacts of the pipeline, including any increased withdrawal of Wailua river surface water resources.*

Analysis of environmental impacts to water resources supplying the proposed project's water storage area at Kāpaia reservoir will be crucial to the DEA. The DEA should include an analysis of potential impacts on highly relevant Wailua river surface water resources and not merely recite the availability of water in the Hanamā'ulu aquifer system area. Further, as discussed *infra* Comment No. 3, the DEA should assess the intended uses of water resources and potential cumulative impacts on all public trust uses of water.

The Kāpaia reservoir receives waters from the Wailua River and other tributaries via a portion of the Hanamā'ulu ditch.⁴ The surface water intake for the Hanamā'ulu ditch is located at an intersection of the South Fork of the Wailua river and the outflow from the Kaua'i Island Utility Cooperative (KIUC) hydropower systems. The KIUC is seeking a lease for water diverted from the North Fork of the Wailua river. KIUC's operations divert North Fork Wailua river waters for its hydropower systems and do not return the water to the North Fork of the Wailua stream. Rather, waters diverted by KIUC appear to pass into the Hanamā'ulu ditch and other portions of the East Kaua'i irrigation system, and then the Kāpaia reservoir. Kāpaia reservoir water is pumped to the Grove Farm Surface Water Treatment Plant (SWTP) for processing, then to an enclosed 264,000 gallon storage tank, and then sent into the KDOW transmission and the KDOW distribution system. No environmental assessment or statement was prepared for Grove Farm SWTP operations and the DEA should include this assessment within its scope.

Assuming the proposed project would result in increased capacity for water delivery, the DEA must include an analysis of impacts consequent to increased surface water withdrawals from the Wailua River and other sources contributing to the Kāpaia

⁴ See Dep't of Agriculture, State of Hawaii, "East Kauai Irrigation System Map 1" (Dec. 2003) available at: <http://hdoa.hawaii.gov/arm/files/2012/12/Map1.pdf>.

reservoir. The DEA should specifically discuss the amount of increased water delivery or withdrawals from Kāpaia reservoir. According to a summary of the Kaua'i County WUDP Update, approximately 2 mgd of surface water goes into the Kaua'i County Līhu'e-Hanamā'ulu-Puhi system.⁵ The Grove Farm SWTP has an "initial capacity" to deliver 3 million gallons per day (mgd) to KDOW's Līhu'e-Hanamā'ulu-Puhi water system.⁶ Based on these representations, the DEA should assess the impacts of increased surface water withdrawals.

Comment #3: *DHHL interests in water resources for its Wailua planned developments must be protected.*

DHHL considers water resource protection as one of its interests under its WPP. The Wailua river runs along the top boundary of DHHL's tract and the Hanamā'ulu ditch ends along the Kalepa Ridge, mauka of the Wailua tract.

The DEA discussion of the purpose and need for the proposed project should include description of the proposed uses for the increased water delivery. This information would assist DHHL in assessing whether and how public trust uses of water, including domestic uses and Hawaiian Home Land uses, would be protected.

The DEA should include an analysis of the ways DHHL's reservation of waters from Wailua will be protected, including any water credits agreement for a portion of increased water delivery or water lease provisions, as discussed further below.

Comment #4: *The DEA should include a discussion of a water lease or license as a "possible permit" required for its proposed water withdrawals.*

Because increased surface water withdrawal may be a component of KDOW's proposed project, KDOW should be required to obtain a water license or lease for its approximately 3 mgd of surface water usage. Diverted surface waters that eventually enter the Grove Farm SWTP originate from State lands. HRS §171-58 authorizes the Board of Land and Natural Resources (BLNR) to lease rights to capture, divert, or impound water, such as those

⁵ Dep't of Water, Kaua'i County, Kaua'i Water Use Development Plan Update Meeting Minutes (Oct. 20, 2015) available at: http://www.kauaiwater.org/KWUDPMinutes_SummaryOct%202015.pdf.

⁶ Grove Farm, Waiahi Surface Water Treatment Plant Website (accessed Oct. 5, 2016) available at: <http://www.grovetfarm.com/waiahi-surface-water-treatment-plant>.

Mr. William Eddy
June 30, 2017
Page 5

diverted from the Wailua River, impounded at Kāpaia reservoir, and captured for use by the Grove Farm SWTP. Protection of DHHL's water reservations may be accomplished through HRS §171-58(g), which requires such protections to be included in these authorized water licenses or lease agreements.⁷

Comment #5: The DEA should include an extensive Cultural Impact Assessment.

The State Office of Environmental Quality Control (OEQC) provides guidelines for preparing Cultural Impact Assessments (CIAs) for proposed projects that may significantly affect cultural resources.⁸ The DEA should include a discussion of cultural impacts consequent to KDOW's proposed action.

While the proposed project is located in a relatively developed, urban area, a CIA must still be prepared. See OEQC Guide at 12 ("If the subject area is in a developed urban setting, cultural impacts must still be assessed."). Also, in this case, the geographic scope of potential cultural impacts should extend to the upstream water diversion upon which the proposed project depends, and to downstream effects of reduced water supply. As discussed *supra*, Comment No. 1, surface water sources for the Grove Farm SWTP include diversions from the North Fork of the Wailua River. Portions of the North Fork of the Wailua River below the diversions are drained dry. Potential impacts on water, including stream waters, as important cultural resources for Native Hawaiian traditional and customary practices should be assessed. The Wailua River State Park incorporates the Wailua Complex of Heiau, which is a National Historic Landmark. Heiau are purposefully located and several of the heiau complexes were placed adjacent to the Wailua River - the Hikinaakalā Heiau, the Poli'ahu Heiau, and the Kalaekamanu Heiau (Holohololū Heiau). Wailua Regional Plan at 7.

⁷ Such a water lease would be subject to DHHL's entitlements pursuant to HHCA §213 and article XII, section 1 of the Hawai'i State Constitution, which provides 30 percent of "state receipts derived from the leasing of cultivated sugarcane lands under any provision of law or from water licenses shall be transferred to the native Hawaiian rehabilitation fund, section 213 of the Hawaiian Homes Commission Act, 1920, for the purposes enumerated in that section." Haw. Const. art. XII, §1; HHCA § 213 (1920).

⁸ OEQC, Guide to the Practice and Implementation of HEPA, at 11 (Jan. 2012) available at: http://oeqc.doh.hawaii.gov/Shared%20Documents/Misc_Documents/Guide%20to%20the%20Implementation%20and%20Practice%20of%20the%20HEPA.pdf (OEQC Guide).

Mr. William Eddy
June 30, 2017
Page 6

DHHL beneficiaries include native Hawaiian traditional and customary cultural practitioners, whose practices include gathering, fishing, and other practices. Inclusions of information about prospective, positive significant impacts on surface waters would further assist in assessing the impacts of KDOW's proposal on DHHL interests.

Conclusion

Mahalo nui for considering DHHL's comments on the proposed DEA. Please direct any questions to me at (808) 620-9501, or your staff may contact Kaleo Manuel in our Planning Office at (808) 620-9485 or at Kaleo.L.Manuel@hawaii.gov.

Aloha,

A handwritten signature in black ink, appearing to read "Jobie M. K. Masagatani". The signature is fluid and cursive, with a prominent loop at the end.

Jobie M. K. Masagatani, Chairman
Hawaiian Homes Commission



KODANI & ASSOCIATES ENGINEERS, LLC

January 25, 2018

Ms. Jobie M. K. Masagatani, Chair
Hawaiian Homes Commission
P.O. Box 1879
Honolulu, HI 96805

**SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment
Lihue, Kauai, Hawaii
K04-4022-1**

Dear Ms. Masagatani,

Mahalo for your letter dated June 30, 2017 in response to the pre-consultation letter we sent to you. This letter serves as a formal acknowledgement of your response to us.

Please find below our responses to your comments:

Comment #1: The DEA should assess impacts on DHHL water demands as stated in the State Water Projects Plan.

In light of your comments, we have included in the subject Draft EA a discussion of the *Hawai'i Water Plan*, including the *State Water Projects Plan*, as it relates to the proposed action. The proposed action is part of the Kaua'i Department of Water's long-range planning document, *Water Plan 2020*, which includes detailed analysis of present and projected water demands within the County of Kaua'i. The purpose of the proposed action is to relieve an inadequate water transmission segment within the existing water system, improve system redundancy, and provide for increased fire protection. It is acknowledged that the DHHL Wailua project is described as having a potable water demand of 0.7075 MGD (some planning documents reference 0.6 MGD); however, the proposed action is limited to the installation of a water transmission main as a relief line to increase transmission capacity within the existing water system and will not impact the DHHL's Wailua lands water demands.

Comment #2: The DEA should include assessment of the secondary and cumulative impacts of the pipeline, including any increased withdrawal of Wailua river surface water resources.

TO: Ms. Jobie M. K. Masagatani, Chair
Hawaiian Homes Commission

-2-

January 25, 2018

**SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment
Lihue, Kauai, Hawaii
K04-4022-1**

The Draft Environmental Assessment contains a description of the proposed action with respect to regional water resources. The proposed action will not result in the loss of any natural resources, surface water or ground water, since the present volume of water output from the groundwater wells and Waiahi Surface Water Treatment Plant will not increase as a result of the proposed action. The use of either groundwater or surface water for domestic purposes does not constitute an irrevocable commitment to loss or destruction of any natural or cultural resources. The proposed relief line will increase water transmission capacity within the existing Kaua'i Department of Water's water system; however, it will not result in any increase of the capacity of any ground-water or surface-water sources. The primary and secondary impacts of the proposed action are limited to the immediate project area and do not impact or cause any increased withdrawal of Wailua River water.

Comment #3: DHHL interests in water resources for its Wailua planned developments must be protected.

As described above, a discussion of the State Water Projects Plan and a discussion of regional water resources is contained within the Environmental Characteristics chapter of the Draft Environmental Assessment. The purpose of the proposed action is to relieve an inadequate water transmission segment within the existing water system, improve system redundancy, and provide for increased fire protection. The proposed action will not impact DHHL's interests in water resources for its Wailua planned developments.

Comment #4: The DEA should include a discussion of a water lease or license as a "possible permit" required for its proposed water withdrawals.

The proposed action is limited to the installation of a relief line that connects on each end to existing water transmission mains. The leasing or licensing for water withdrawals is beyond the scope of the proposed action. Nevertheless, a discussion of water resources is contained within the Environmental Characteristics chapter of the Draft Environmental Assessment.

Comment #5: The DEA should include an extensive Cultural Impact Assessment.

TO: Ms. Jobie M. K. Masagatani, Chair
Hawaiian Homes Commission

-3-

January 25, 2018

**SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment
Lihue, Kauai, Hawaii
K04-4022-1**

An *Archaeological, Historical and Cultural Impact Assessment* has been completed for the proposed action and has been attached as Appendix C to the Draft Environmental Assessment. The findings of the *Archeological, Historical and Cultural Impact Assessment* conclude that the proposed action will not adversely impact traditional and customary native Hawaiian rights and practices nor will it adversely affect any significant historic properties.

A copy of your comment letter and our response will be included in the DEA. A copy of the DEA will be available to the Department upon its publication in the Office of Environmental Quality Control's Environmental Notice.

Sincerely,



William Eddy, PE
Vice President

c: County of Kaua'i, Department of Water



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

William Arakaki
Department of Education
3060 Eiwa Street, Room 305
Lihue, HI 96766

**SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i**

The County of Kaua'i, Department of Water (KDOW) has identified your office as having jurisdiction or expertise in regards to the subject Draft Environmental Assessment (DEA). Kodani & Associates Engineers is preparing the subject DEA on behalf of KDOW and pursuant to Chapter 343, we are conducting the required pre-consultation. We respectfully request your advice and input on this matter.

The proposed project generally consists of an approximately 9,000 foot long, 18-inch diameter, potable water transmission main along the existing 'Ehiku Street and the Kapaia Cane Haul Road from Kūhiō Highway to Ma'alo Road. The proposed transmission main will connect to existing KDOW 16" diameter mains on each end. KDOW seeks to improve transmission capacity in the existing Puhī-Līhu'e-Hanama'ulu water system and as such the proposed project is contained in the Department's comprehensive master plan entitled *Water Plan 2020*. Please find the attached project location map for your reference.

We respectfully request a response from your agency within 30 calendar days from the date of receipt. If we do not receive any comments within the 30 calendar days, we will take this as a response of no comment. Should you have any questions or require additional information, please contact me by email at bill@kodani.com. Project comments may be mailed to our mailing address below or emailed to me at bill@kodani.com.

Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment
c: Department of Water with attachment

MEMO TO FILE

DATE: December 28, 2017

BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: State of Hawai`i, Department of Education, Kaua`i District
Office

NOTE: No response has been received from the addressee to our May
26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Mayor Bernard P. Carvalho Jr.
Office of The Mayor
4444 Rice St, Suite 235
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

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The proposed project generally consists of an approximately 9,000 foot long, 18-inch diameter, potable water transmission main along the existing 'Ehiku Street and the Kapaia Cane Haul Road from Kūhiō Highway to Ma'alo Road. The proposed transmission main will connect to existing KDOW 16" diameter mains on each end. KDOW seeks to improve transmission capacity in the existing Puhī-Līhu'e-Hanama'ulu water system and as such the proposed project is contained in the Department's comprehensive master plan entitled *Water Plan 2020*. Please find the attached project location map for your reference.

We respectfully request a response from your agency within 30 calendar days from the date of receipt. If we do not receive any comments within the 30 calendar days, we will take this as a response of no comment. Should you have any questions or require additional information, please contact me by email at bill@kodani.com. Project comments may be mailed to our mailing address below or emailed to me at bill@kodani.com.

Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment
c: Department of Water with attachment

MEMO TO FILE

DATE: December 28, 2017

BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: County of Kaua`i, Office of the Mayor

NOTE: A meeting with Mayor Carvalho, Mr. Wally Rezentes Jr (Mayor's Administrative Assistant), Mr. Edward Doi (Department of Water) and myself was held on February 15, 2017. Input from the participants was received and incorporated, to the extent possible, in the Draft EA.

No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Mel Rapozo, Council Chair
Kaua'i County Council
4396 Rice Street, Suite 209
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

The County of Kaua'i, Department of Water (KDOW) has identified your office as having jurisdiction or expertise in regards to the subject Draft Environmental Assessment (DEA). Kodani & Associates Engineers is preparing the subject DEA on behalf of KDOW and pursuant to Chapter 343, we are conducting the required pre-consultation. We respectfully request your advice and input on this matter.

The proposed project generally consists of an approximately 9,000 foot long, 18-inch diameter, potable water transmission main along the existing 'Ehiku Street and the Kapaia Cane Haul Road from Kūhiō Highway to Ma'alo Road. The proposed transmission main will connect to existing KDOW 16" diameter mains on each end. KDOW seeks to improve transmission capacity in the existing Puhi-Līhu'e-Hanama'ulu water system and as such the proposed project is contained in the Department's comprehensive master plan entitled *Water Plan 2020*. Please find the attached project location map for your reference.

We respectfully request a response from your agency within 30 calendar days from the date of receipt. If we do not receive any comments within the 30 calendar days, we will take this as a response of no comment. Should you have any questions or require additional information, please contact me by email at bill@kodani.com. Project comments may be mailed to our mailing address below or emailed to me at bill@kodani.com.

Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment

c: Department of Water with attachment

MEMO TO FILE

DATE: December 28, 2017

BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: Kaua`i County Council, Council Chair Rapozo

NOTE: A meeting with Council Chair Rapozo and myself was held on February 6, 2017. Input from Council Chair was received and incorporated, to the extent possible, in the Draft EA.

No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Ross Kagawa, Council Vice Chair
Kaua'i County Council
4396 Rice Street, Suite 209
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

The County of Kaua'i, Department of Water (KDOW) has identified your office as having jurisdiction or expertise in regards to the subject Draft Environmental Assessment (DEA). Kodani & Associates Engineers is preparing the subject DEA on behalf of KDOW and pursuant to Chapter 343, we are conducting the required pre-consultation. We respectfully request your advice and input on this matter.

The proposed project generally consists of an approximately 9,000 foot long, 18-inch diameter, potable water transmission main along the existing 'Ehiku Street and the Kapaia Cane Haul Road from Kūhiō Highway to Ma'alo Road. The proposed transmission main will connect to existing KDOW 16" diameter mains on each end. KDOW seeks to improve transmission capacity in the existing Puhi-Līhu'e-Hanama'ulu water system and as such the proposed project is contained in the Department's comprehensive master plan entitled *Water Plan 2020*. Please find the attached project location map for your reference.

We respectfully request a response from your agency within 30 calendar days from the date of receipt. If we do not receive any comments within the 30 calendar days, we will take this as a response of no comment. Should you have any questions or require additional information, please contact me by email at bill@kodani.com. Project comments may be mailed to our mailing address below or emailed to me at bill@kodani.com.

Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment

c: Department of Water with attachment

MEMO TO FILE

DATE: December 28, 2017

BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: Kaua`i County Council, Vice Chair Kagawa

NOTE: A meeting with Vice Chair was requested, however due to time constraints, the meeting was never held.

No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Arthur Brun, Councilmember
Kaua'i County Council
4396 Rice Street, Suite 209
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

The County of Kaua'i, Department of Water (KDOW) has identified your office as having jurisdiction or expertise in regards to the subject Draft Environmental Assessment (DEA). Kodani & Associates Engineers is preparing the subject DEA on behalf of KDOW and pursuant to Chapter 343, we are conducting the required pre-consultation. We respectfully request your advice and input on this matter.

The proposed project generally consists of an approximately 9,000 foot long, 18-inch diameter, potable water transmission main along the existing 'Ehiku Street and the Kapaia Cane Haul Road from Kūhiō Highway to Ma'alo Road. The proposed transmission main will connect to existing KDOW 16" diameter mains on each end. KDOW seeks to improve transmission capacity in the existing Puhi-Līhu'e-Hanama'ulu water system and as such the proposed project is contained in the Department's comprehensive master plan entitled *Water Plan 2020*. Please find the attached project location map for your reference.

We respectfully request a response from your agency within 30 calendar days from the date of receipt. If we do not receive any comments within the 30 calendar days, we will take this as a response of no comment. Should you have any questions or require additional information, please contact me by email at bill@kodani.com. Project comments may be mailed to our mailing address below or emailed to me at bill@kodani.com.

Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment
c: Department of Water with attachment

MEMO TO FILE

DATE: December 28, 2017

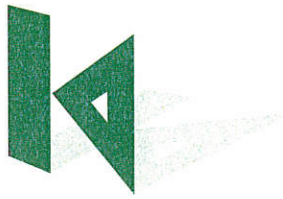
BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: Kaua`i County Council, Councilmember Brun

NOTE: A meeting with Councilmembers Brun and Kaneshiro and myself was held on February 6, 2017. Input from the Councilmembers was received and incorporated, to the extent possible, in the Draft EA.

No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Mason K. Chock, Councilmember
Kaua'i County Council
4396 Rice Street, Suite 209
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

The County of Kaua'i, Department of Water (KDOW) has identified your office as having jurisdiction or expertise in regards to the subject Draft Environmental Assessment (DEA). Kodani & Associates Engineers is preparing the subject DEA on behalf of KDOW and pursuant to Chapter 343, we are conducting the required pre-consultation. We respectfully request your advice and input on this matter.

The proposed project generally consists of an approximately 9,000 foot long, 18-inch diameter, potable water transmission main along the existing 'Ehiku Street and the Kapaia Cane Haul Road from Kūhiō Highway to Ma'alo Road. The proposed transmission main will connect to existing KDOW 16" diameter mains on each end. KDOW seeks to improve transmission capacity in the existing Puhī-Līhu'e-Hanama'ulu water system and as such the proposed project is contained in the Department's comprehensive master plan entitled *Water Plan 2020*. Please find the attached project location map for your reference.

We respectfully request a response from your agency within 30 calendar days from the date of receipt. If we do not receive any comments within the 30 calendar days, we will take this as a response of no comment. Should you have any questions or require additional information, please contact me by email at bill@kodani.com. Project comments may be mailed to our mailing address below or emailed to me at bill@kodani.com.

Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment
c: Department of Water with attachment

MEMO TO FILE

DATE: December 28, 2017

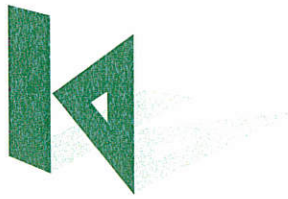
BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: Kaua`i County Council, Councilmember Chock

NOTE: A meeting with Councilmembers Chock and Yukimura and myself was held on February 7, 2017. Input from the Councilmembers was received and incorporated, to the extent possible, in the Draft EA.

No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Arryl Kaneshiro, Councilmember
Kaua'i County Council
4396 Rice Street, Suite 209
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

The County of Kaua'i, Department of Water (KDOW) has identified your office as having jurisdiction or expertise in regards to the subject Draft Environmental Assessment (DEA). Kodani & Associates Engineers is preparing the subject DEA on behalf of KDOW and pursuant to Chapter 343, we are conducting the required pre-consultation. We respectfully request your advice and input on this matter.

The proposed project generally consists of an approximately 9,000 foot long, 18-inch diameter, potable water transmission main along the existing 'Ehiku Street and the Kapaia Cane Haul Road from Kūhiō Highway to Ma'alo Road. The proposed transmission main will connect to existing KDOW 16" diameter mains on each end. KDOW seeks to improve transmission capacity in the existing Puhi-Līhu'e-Hanama'ulu water system and as such the proposed project is contained in the Department's comprehensive master plan entitled *Water Plan 2020*. Please find the attached project location map for your reference.

We respectfully request a response from your agency within 30 calendar days from the date of receipt. If we do not receive any comments within the 30 calendar days, we will take this as a response of no comment. Should you have any questions or require additional information, please contact me by email at bill@kodani.com. Project comments may be mailed to our mailing address below or emailed to me at bill@kodani.com.

Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment

c: Department of Water with attachment

MEMO TO FILE

DATE: December 28, 2017

BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: Kaua`i County Council, Councilmember Kaneshiro

NOTE: A meeting with Councilmembers Brun and Kaneshiro and myself was held on February 6, 2017. Input from the Councilmembers was received and incorporated, to the extent possible, in the Draft EA.

No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Derek S.K. Kawakami, Councilmember
Kaua'i County Council
4396 Rice Street, Suite 209
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua`i, Hawai`i

The County of Kaua`i, Department of Water (KDOW) has identified your office as having jurisdiction or expertise in regards to the subject Draft Environmental Assessment (DEA). Kodani & Associates Engineers is preparing the subject DEA on behalf of KDOW and pursuant to Chapter 343, we are conducting the required pre-consultation. We respectfully request your advice and input on this matter.

The proposed project generally consists of an approximately 9,000 foot long, 18-inch diameter, potable water transmission main along the existing 'Ehiku Street and the Kapaia Cane Haul Road from Kūhiō Highway to Ma'alo Road. The proposed transmission main will connect to existing KDOW 16" diameter mains on each end. KDOW seeks to improve transmission capacity in the existing Puhi-Līhu'e-Hanama'ulu water system and as such the proposed project is contained in the Department's comprehensive master plan entitled *Water Plan 2020*. Please find the attached project location map for your reference.

We respectfully request a response from your agency within 30 calendar days from the date of receipt. If we do not receive any comments within the 30 calendar days, we will take this as a response of no comment. Should you have any questions or require additional information, please contact me by email at bill@kodani.com. Project comments may be mailed to our mailing address below or emailed to me at bill@kodani.com.

Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment

c: Department of Water with attachment

MEMO TO FILE

DATE: December 28, 2017

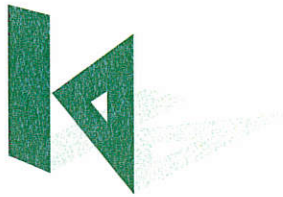
BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: Kaua`i County Council, Councilmember Kawakami

NOTE: A meeting with Councilmember Kawakami and myself was held on February 6, 2017. Input from the Councilmember was received and incorporated, to the extent possible, in the Draft EA.

No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Joann A. Yukimura, Councilmember
Kaua'i County Council
4396 Rice Street, Suite 209
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

The County of Kaua'i, Department of Water (KDOW) has identified your office as having jurisdiction or expertise in regards to the subject Draft Environmental Assessment (DEA). Kodani & Associates Engineers is preparing the subject DEA on behalf of KDOW and pursuant to Chapter 343, we are conducting the required pre-consultation. We respectfully request your advice and input on this matter.

The proposed project generally consists of an approximately 9,000 foot long, 18-inch diameter, potable water transmission main along the existing 'Ehiku Street and the Kapaia Cane Haul Road from Kūhiō Highway to Ma'alo Road. The proposed transmission main will connect to existing KDOW 16" diameter mains on each end. KDOW seeks to improve transmission capacity in the existing Puhī-Līhu'e-Hanama'ulu water system and as such the proposed project is contained in the Department's comprehensive master plan entitled *Water Plan 2020*. Please find the attached project location map for your reference.

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Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment

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MEMO TO FILE

DATE: December 28, 2017

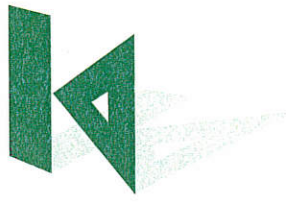
BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: Kaua`i County Council, Councilmember Yukimura

NOTE: A meeting with Councilmembers Chock and Yukimura and myself was held on February 7, 2017. Input from the Councilmembers was received and incorporated, to the extent possible, in the Draft EA.

No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Michael Dahilig, Planning Director
Planning Department
4444 Rice St, Suite A473
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

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Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment
c: Department of Water with attachment

MEMO TO FILE

DATE: December 28, 2017

BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: County of Kaua`i, Planning Department

NOTE: A meeting with a Mr. Dale Cua, Planner, and myself was held on November 4, 2016. Input from the Planner was received and incorporated, to the extent possible, in the Draft EA.

No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Lyle Tabata, Acting County Engineer
Department of Public Works
4444 Rice St, Suite 275
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

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The proposed project generally consists of an approximately 9,000 foot long, 18-inch diameter, potable water transmission main along the existing 'Ehiku Street and the Kapaia Cane Haul Road from Kūhiō Highway to Ma'alo Road. The proposed transmission main will connect to existing KDOW 16" diameter mains on each end. KDOW seeks to improve transmission capacity in the existing Puhi-Līhu'e-Hanama'ulu water system and as such the proposed project is contained in the Department's comprehensive master plan entitled *Water Plan 2020*. Please find the attached project location map for your reference.

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Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment
c: Department of Water with attachment

Bernard P. Carvalho, Jr.
Mayor



Lyle Tabata
Acting County Engineer

Wallace G. Rezentes, Jr.
Managing Director

DEPARTMENT OF PUBLIC WORKS

County of Kaua'i, State of Hawai'i

4444 Rice Street, Suite 275, Līhu'e, Hawai'i 96766

TEL (808) 241-4992 FAX (808) 241-6604

May 30, 2017

Mr. William Eddy, P.E.
Kodani & Associates Engineers, LLC
3126 Akahi Street
Līhu'e, HI 96766

Subject: Solid Waste Management Division, Department of Public Works

Dear Mr. Eddy,

We are writing in response to the Pre-Consultation for Environmental Impact Statement (EIS) meeting you requested with Troy Tanigawa or a representative, to seek advice and input on the impact of this proposed project on the County solid waste system.

We would like to inform you that Keith Suga, CIP Manager is temporarily assigned to manage the Solid Waste Division.

I have forwarded your request for a meeting in regards to Pre-Consultation for Environmental Impact Statement (EIS) along with the enclosures to Keith Suga. Please contact Keith at (808) 241-4838 or ksuga@kauai.gov so that arrangements may be made for you to meet.

Your written correspondence may continue to be addressed to me, in attention to Keith Suga:

Lyle Tabata, Acting County Engineer
Department of Public Works
4444 Rice Street, Suite 275
Līhu'e, HI 96766

Yours truly,

Lyle Tabata
Acting County Engineer



KODANI & ASSOCIATES ENGINEERS, LLC

July 17, 2017

Mr. Lyle Tabata, Acting County Engineer
Department of Public Works
Engineering Division
County of Kauai
4444 Rice Street, Suite 275
Lihu'e, HI 96766

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment
Hanamaulu, Kauai, Hawaii

Dear Mr. Tabata,

Thank you for your letter dated May 30, 2017. This letter confirms that we have received your response and comments regarding this project.

From your letter, we are aware of the temporary change in authority at the Solid Waste Division. We have contacted & spoken to the temporary manager, received his input, and will incorporate his input in the Draft Environmental Assessment.

We expect to publish the complete Draft Environmental Assessment (EA) in August 2017, at which time you may download the document from the State of Hawaii Office of Environmental Quality Control (OEQC) website at <http://health.hawaii.gov/oeqc/>. There is a 30-day public input period after the Draft EA is posted by the OEQC.

If you have any further questions or concerns regarding this project, please feel free to contact our office at (808)245-9591 or contact me directly at bill@kodani.com.

Sincerely,

William Eddy, PE
Vice President

c: Department of Water

MEMO TO FILE

DATE: December 28, 2017

BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: County of Kaua`i, Department of Public Works, Acting County Engineer

NOTE: Mr. Lyle Tabata, Acting County Engineer, contacted our office and informed us of an existing irrigation pipeline that is located along the Kapaia Cane Haul Road alignment. He said that it may provide an alternative to the proposed 18” transmission main. Mr. Tabata is knowledgeable of the existing irrigation pipeline as he was the Manager of Lihue Plantation during the time in which the pipeline was constructed (approximately 1995). Mr. Tabata recalled that the pipe material is HDPE and the diameter is either 22” or 24”. Mr. Tabata graciously offered to show us the field location of the pipeline and a field trip was made. Mr. Tabata recommended that we contact Mr. Haku Rivera because Mr. Rivera was the general contractor on the job. I subsequently researched Lihue Plantation records in an attempt to locate construction plans but was unsuccessful. We contacted Mr. Rivera and he provided a hand-drawn sketch of the pipeline route and provided more detail. Subsequently we contact Mr. Max Manera, an employee with the Grove Farm irrigation contractor, AJAR. Mr. Manera clarified that the irrigation pipe is 22” diameter and intermittently still used for irrigation and agricultural water uses.

MEMO TO FILE

DATE: December 28, 2017

BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: County of Kaua`i, Department of Public Works, Solid Waste
Division

NOTE: Per the May 30, 2017 letter from the Acting County Engineer, Mr. Lyle Tabata, I contacted Mr. Keith Suga by telephone to solicit his input on the proposed project. I inquired if the Kapaia Cane Haul Road alignment was still being considered for the County of Kauai's proposed new Municipal Solid Waste Landfill. Mr. Suga informed me that the Traffic and Roadways Engineering Feasibility Study (TREFS) was completed and that the Kapaia Cane Haul Road alignment was not selected as the route to the proposed landfill. He said that the proposed waterline project did not appear to impact the Solid Waste Division and that he did not have any objection to the project.

Bernard P. Carvalho, Jr.
Mayor



Lyle Tabata
Acting County Engineer

Wallace G. Rezendes, Jr.
Managing Director

DEPARTMENT OF PUBLIC WORKS

County of Kaua'i, State of Hawai'i

4444 Rice Street, Suite 275, Lihu'e, Hawai'i 96766
TEL (808) 241-4992 FAX (808) 241-6604

RECEIVED

JUN 20 2017

June 20, 2017

William Eddy, P.E.
Vice President
Kodani & Associates Engineers, LLC
3126 Akahi Street
Lihu'e Hawai'i 96766

Subject Pre-Consultation for Draft Environmental Assessment
Kāpaia Cane Haul Road 18-inch Main
Chapter 343, Hawai'i Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Lihu'e, Kaua'i, Hawai'i

Dear Mr. Eddy:

The Engineering Division of the Department of Public Works (DPW) received the subject Pre-Consultation letter dated May 26, 2017. We appreciate the opportunity to provide input on the proposed project which intends to install approximately 9000 linear feet of 18-inch diameter water line along the existing Ehiku Street and the Kāpaia Cane Haul Road. We believe following items should be discussed in the proposed Environmental Assessment (DEA):

1. The short term impacts of construction on traffic in the area of the Ehiku Street should be fully discussed and evaluated in the Environmental Assessment.
2. The County of Kaua'i plans for a future landfill and a Lihue Mauka Road may include future roads that follow the alignment of the Kāpaia Cane Haul Road.

Thank you for the opportunity to review and comment on the DEA for this project. We wish to remain on your mailing list to continue participating in the environmental review process. If you have any questions or need additional information, please contact Stanford Iwamoto, Engineering Division at (808) 241-4896.

Kāpaia Cane Haul Road 18-Inch Main
Pre-consultation for DEA
June 20, 2017
Page 2

Sincerely,

A handwritten signature in black ink, appearing to read 'M. Moule', with a long horizontal line extending to the right.

MICHAEL MOULE, P.E.
Chief Engineering Division

MM/SI

Copy to: Design and Permitting
Department of Water



KODANI & ASSOCIATES ENGINEERS, LLC

July 17, 2017

Mr. Michael Moule, P.E., Chief
Department of Public Works
Engineering Division
County of Kauai
4444 Rice Street, Suite 275
Lihu'e, HI 96766

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment
Hanamaulu, Kauai, Hawaii

Dear Mr. Moule,

Thank you for your letter dated June 20, 2017. This letter confirms that we have received your response and comments regarding this project.

Based on your letter, we will incorporate a discussion regarding short-term impacts of construction on traffic in the project area, as well as a discussion of the Traffic and Roadways Engineering Feasibility Study (TREFS) for a future landfill and future roads that follow the alignment of the Kapaia Cane Haul Road.

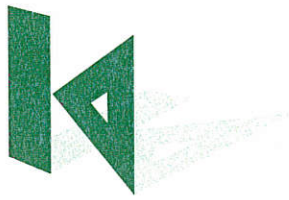
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If you have any further questions or concerns regarding this project, please feel free to contact our office at (808)245-9591 or contact me directly at bill@kodani.com.

Sincerely,

William Eddy, PE
Vice President

c: Department of Water



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Robert Westerman, Fire Chief
Fire Department
4444 Rice St, Suite 315
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

The County of Kaua'i, Department of Water (KDOW) has identified your office as having jurisdiction or expertise in regards to the subject Draft Environmental Assessment (DEA). Kodani & Associates Engineers is preparing the subject DEA on behalf of KDOW and pursuant to Chapter 343, we are conducting the required pre-consultation. We respectfully request your advice and input on this matter.

The proposed project generally consists of an approximately 9,000 foot long, 18-inch diameter, potable water transmission main along the existing 'Ehiku Street and the Kapaia Cane Haul Road from Kūhiō Highway to Ma'alo Road. The proposed transmission main will connect to existing KDOW 16" diameter mains on each end. KDOW seeks to improve transmission capacity in the existing Puhi-Līhu'e-Hanama'ulu water system and as such the proposed project is contained in the Department's comprehensive master plan entitled *Water Plan 2020*. Please find the attached project location map for your reference.

We respectfully request a response from your agency within 30 calendar days from the date of receipt. If we do not receive any comments within the 30 calendar days, we will take this as a response of no comment. Should you have any questions or require additional information, please contact me by email at bill@kodani.com. Project comments may be mailed to our mailing address below or emailed to me at bill@kodani.com.

Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment
c: Department of Water with attachment

MEMO TO FILE

DATE: December 28, 2017

BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: County of Kaua`i, Fire Department, Fire Chief

NOTE: A meeting with the Fire Chief, several of his staff members and myself was held on February 8, 2017. Input from the Fire Chief and staff was received and incorporated, to the extent possible, in the Draft EA.

No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Kanani Fu, Housing Director
Housing Agency
4444 Rice St, Suite 330
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

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Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment

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DATE: December 28, 2017

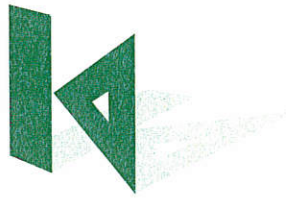
BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: County of Kaua`i, Housing Agency

NOTE: A meeting with Ms. Kanani Fu, Housing Agency Director and Mr. Keith Perry, Assistant to the Director, and myself was held on February 3, 2017. Input from the Housing Agency was received and incorporated, to the extent possible, in the Draft EA.

No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Debra Lee-Jackson
Hui Ho'opulapula Na Wai o Puna
PO Box 662201
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

The County of Kaua'i, Department of Water (KDOW) has identified your organization as being reasonably affected by the subject project. Kodani & Associates Engineers is preparing the subject Draft Environmental Assessment (DEA) on behalf of KDOW and pursuant to Chapter 343, we are conducting the required pre-consultation. We respectfully request your advice and input on this matter.

The proposed project generally consists of an approximately 9,000 foot long, 18-inch diameter, potable water transmission main along the existing 'Ehiku Street and the Kapaia Cane Haul Road from Kūhiō Highway to Ma'alo Road. The proposed transmission main will connect to existing KDOW 16" diameter mains on each end. KDOW seeks to improve transmission capacity in the existing Puhi-Līhu'e-Hanama'ulu water system and as such the proposed project is contained in the Department's comprehensive master plan entitled *Water Plan 2020*. Please find the attached project location map for your reference.

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Sincerely,

William Eddy, PE
Vice President

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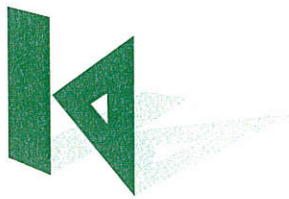
DATE: December 28, 2017

BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: Hui Ho`opulapula Na Wai o Puna

NOTE: No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Mark Perriello
Kaua'i Chamber of Commerce
4268H Rice St
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

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Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment
c: Department of Water with attachment



June 27, 2017

William Eddy, PE
Vice President
Kodani & Associates Engineers, LLC
3126 Akahi Street
Lihue, Hawaii, 96766

RE: Kapaia Cane Haul Road 18-Inch Main Pre-Consultation for Draft Environmental Assessment

Dear Mr. Eddy:

Thank you for soliciting input from the Kauai Chamber of Commerce (the Chamber) regarding the subject project. As the voice for business on Kauai, we value the opportunity to share our perspective on this critical improvement to the Puhi-Lihue-Hanamaulu water system on behalf of our members.

The proposed project was anticipated by the Department of Water in its comprehensive master plan entitled *Water Plan 2020*, which was finalized in 2001. According to the Department website this comprehensive planning effort will ensure safe, affordable and sufficient drinking water for our community.

As disclosed by the Department of Water, "water planning is done for properties with approved zoning." As such, the improved transmission capacity created by this project will meet current and future consumer demands.

Improved water transmission capacity will literally breathe life into the area economy. The alternative is a continuation of the housing crisis, public health and safety issues, and unplanned interruptions to water services, which would negatively impact our residents and businesses alike.

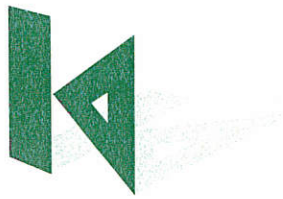
The Chamber's mission is "to promote, develop and improve commerce, quality growth and economic stability in the County of Kauai." The Chamber boasts an active membership of more than 650 businesses and professional women and men representing 450 Kauai firms who give freely of their time and talents to advance the commercial, financial, industrial, civic and social well-being of the County of Kauai and the State of Hawaii.

Thank you for the opportunity to share our perspective. If you have any questions, please feel free to contact me directly at mark@kauaichamber.org or by phone at (808) 245-7363.

Warm regards,

A handwritten signature in blue ink, appearing to read "Mark Perriello".

Mark Perriello
President & CEO



KODANI & ASSOCIATES ENGINEERS, LLC

July 17, 2017

Mr. Mark Perriello, President & CEO
Kaua'i Chamber of Commerce
4268-H Rice Street
Lihue, HI 96766

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment
Hanamaulu, Kauai, Hawaii

Dear Mr. Perriello,

Thank you for your letter dated June 27, 2017. This letter confirms that we have received your response and comments regarding this project.

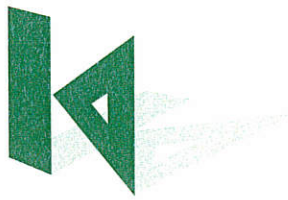
We expect to publish the complete Draft Environmental Assessment (EA) in August 2017, at which time you may download the document from the State of Hawaii Office of Environmental Quality Control (OEQC) website at <http://health.hawaii.gov/oeqc/>. There is a 30-day public input period after the Draft EA is posted by the OEQC.

If you have any further questions or concerns regarding this project, please feel free to contact our office at (808)245-9591 or contact me directly at bill@kodani.com.

Sincerely,

William Eddy, PE
Vice President

c: Department of Water



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Pat Griffin
Lihue Business Association
P.O. Box 291
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

The County of Kaua'i, Department of Water (KDOW) has identified your organization as being reasonably affected by the subject project. Kodani & Associates Engineers is preparing the subject Draft Environmental Assessment (DEA) on behalf of KDOW and pursuant to Chapter 343, we are conducting the required pre-consultation. We respectfully request your advice and input on this matter.

The proposed project generally consists of an approximately 9,000 foot long, 18-inch diameter, potable water transmission main along the existing 'Ehiku Street and the Kapaia Cane Haul Road from Kūhiō Highway to Ma'alo Road. The proposed transmission main will connect to existing KDOW 16" diameter mains on each end. KDOW seeks to improve transmission capacity in the existing Puhi-Līhu'e-Hanama'ulu water system and as such the proposed project is contained in the Department's comprehensive master plan entitled *Water Plan 2020*. Please find the attached project location map for your reference.

We respectfully request a response from your organization within 30 calendar days from the date of receipt. If we do not receive any comments within the 30 calendar days, we will take this as a response of no comment. Should you have any questions or require additional information, please contact me by email at bill@kodani.com. Project comments may be mailed to our mailing address below or emailed to me at bill@kodani.com.

Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment
c: Department of Water with attachment

MEMO TO FILE

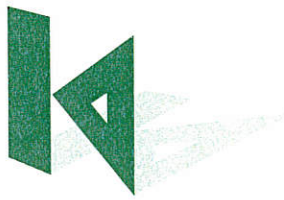
DATE: December 28, 2017

BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: Lihū`e Business Association

NOTE: No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Wilcox Medical Center
3-3420 Kuhio Hwy
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

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Sincerely,

William Eddy, PE
Vice President

Attachment

c: Department of Water with attachment

MEMO TO FILE

DATE: December 28, 2017

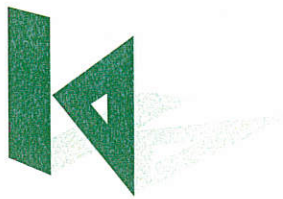
BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: Wilcox Medical Center (WMC)

NOTE: A meeting with Mr. Don Pilker of WMC and myself was held on February 27, 2017. Input from the Mr. Pilker was received and incorporated, to the extent possible, in the Draft EA.

No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Trae Menard, Coordinator
Kauai Watershed Alliance
4371 Puaole Street, Suite C
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

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Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment

c: Department of Water with attachment



Kaua`i Watershed Alliance

Ben A. Dyre Limited Family Partnership, Department of Hawaiian Homelands, Department of Water County of Kaua`i, DLNR — Division of Forestry and Wildlife & Land Management Division, Grove Farm Company, Inc., Jurassic Kahili Ranch, Kamehameha Schools, Kaua`i Ranch LLC, Lihu`e Land Company, McBryde Sugar Company, Ltd., National Tropical Botanical Garden, Princeville Development, LLC

"The Mission of the Kaua`i Watershed Alliance is to PROTECT, PRESERVE and MANAGE our valuable watershed resources for the benefit of our residents, communities and all future generations through the concerted efforts of its members."

June 14, 2017

William Eddy, Vice President
Kodani & Associates Engineers, LLC
3126 Akahi Street
Lihue, Hawaii 96766

RE: Kapaia Cane Haul Road 18-inch Main
Pre-consultation Request for Draft Environmental Assessment
Kauai Department of Water, Water Plan 2020 Project NO. PLH-35B

Dear William Eddy,

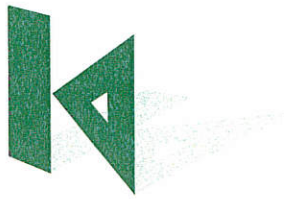
Thank you for your consideration of the Kauai Watershed Alliance (KWA) as an organization that may be affected by the proposed project.

The KWA cannot find any possible impact this proposed project may have on any of the KWA's actions or objectives.

Again, thank you for contacting the KWA.

Sincerely yours,

Allan Rietow
Field Representative, The Nature Conservancy, Kauai Program
Coordinator on behalf of The Kauai Watershed Alliance



KODANI & ASSOCIATES ENGINEERS, LLC

July 17, 2017

Mr. Allan Rietow, Field Representative
The Nature Conservancy, Kauai Program
Coordinator on behalf of The Kauai Watershed Alliance
4371 Puaole Street, Suite C
Lihue, HI 96766

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment
Hanamaulu, Kauai, Hawaii

Dear Mr. Rietow,

Thank you for your letter dated June 14, 2017. This letter confirms that we have received your response and comments regarding this project.

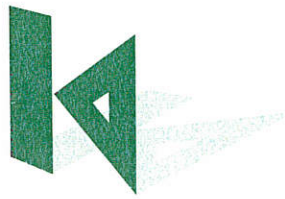
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If you have any further questions or concerns regarding this project, please feel free to contact our office at (808)245-9591 or contact me directly at bill@kodani.com.

Sincerely,

William Eddy, PE
Vice President

c: Department of Water



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Jerry Ornellas, President
East Kauai Water Users Cooperative
P.O. Box 800
Kapaa, HI 96746

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

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Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment
c: Department of Water with attachment

MEMO TO FILE

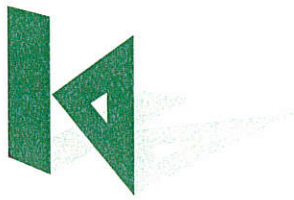
DATE: December 28, 2017

BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: East Kauai Water Users Cooperative

NOTE: No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

AT&T
3-3277 Kuhio Hwy
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

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Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment
c: Department of Water with attachment

MEMO TO FILE

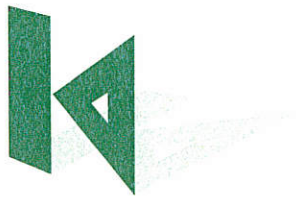
DATE: December 28, 2017

BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: AT&T (retail business center)

NOTE: No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Bransen Kawakami
4524 Ehiku St
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

The County of Kaua'i, Department of Water (KDOW) would like to inform you of a proposed project along `Ehiku Street that might impact you in some way. Kodani & Associates Engineers is preparing the subject Draft Environmental Assessment (DEA) on behalf of the KDOW and pursuant to Chapter 343, we are conducting the required pre-consultation. We respectfully request your input on this matter and will include any concerns you may have in the DEA document.

The proposed project generally consists of an approximately 9,000 foot long, 18-inch diameter, potable water transmission main along the existing 'Ehiku Street and the Kapaia Cane Haul Road from Kūhiō Highway to Ma'alo Road. The proposed transmission main will connect to existing KDOW 16" diameter mains on each end. KDOW seeks to improve transmission capacity in the existing Puhi-Līhu'e-Hanama'ulu water system and as such the proposed project is contained in the Department's comprehensive master plan entitled *Water Plan 2020*. Please find the attached project location map for your reference.

We respectfully request a response from you within 30 calendar days from the date of receipt. If we do not receive any comments within the 30 calendar days, we will take this as a response of no comment. Should you have any questions or require additional information, please contact me by email at bill@kodani.com or by phone at 245-9591. You may submit written comments via mail to our address below or email to me at bill@kodani.com.

Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment
c: Department of Water with attachment

bill eddy

From: Bry Kawakami <4524ehikust@gmail.com>
Sent: Friday, June 09, 2017 7:49 PM
To: bill@kodani.com
Subject: kapaia cane haul road 18" main pre-consultation

Hello Mr. Eddy

I have just a few questions about this project that you guys are preparing to do. First one is how is the traffic with equipment and tractor trailers going to be dealt with? because we live on ehiku st. Second is how will the dust control be dealt with because with all this additional traffic it will be a lot worse. Third is that i want to make sure that it is done during the day time like 8am-4pm because i do have 3 boys which i do not want to have to worry about them not being able to sleep at night because i will not be happy if they do not sleep well. Fourth is will you guys be blocking us from getting to our house? Because we did not ask for any of this. Last is will our water supply be interrupted and will there be a chance of brown water getting into our system? I would also like to know if i could get a copy and plan of what you guys will be doing?

Thanks

Bransen Kawakami



KODANI & ASSOCIATES ENGINEERS, LLC

July 17, 2017

Mr. Bransen Kawakami
4524 Ehiku St.
Lihue, HI 96766

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment
Hanamaulu, Kauai, Hawaii

Dear Mr. Kawakami:

Thank you for your response to our letter in your email dated June 9, 2017. This letter serves as a formal response to the questions or concerns you had regarding this project. Below is a list of responses to your questions and concerns:

1. Traffic:

Kuhio Highway is under the jurisdiction of the State Department of Transportation and `Ehiku Street is under the jurisdiction of the County Department of Public Works. Both of these agencies require that we, as the design engineers, prepare traffic control plans that are included in the project construction plans. The State is requiring that all work within Kuhio Highway be done at night time to avoid the heavy daytime traffic volumes. The majority of work on `Ehiku Street will be done during daytime hours. The exception on `Ehiku Street is that there will be a waterline connection in the `Ehiku/ `Elima intersection, and this waterline connection may need to be done at night when demand for water is low. The tentative location for the proposed 18" waterline is in the center of the lane on the opposite side from your property of `Ehiku Street (attached is a copy of the preliminary plan sheet fronting your property). The traffic control plans, in general, require that we always allow for at least one (1) lane of traffic. A portion of the traffic lane will be closed while the 18" waterline is being installed but the contractor will be required to have flaggers that regulate traffic and allow flow in each direction. Traffic with equipment and tractor-trailers will be allowed to move in each direction, however, there will be delays due to the staggering of traffic flow.

2. Dust control:

The State Department of Health has rules regarding "Air Pollution Control" and dust control. The construction plans explicitly require the contractor to take measures to prevent dust problems. Dust control measures for these types of pipeline projects normally consist of no stockpiling of excavated material in the roadway, spray application of water onto the roadway and in the trench area and no excavation during high wind times. The construction work, including dust control measures, will be inspected and monitored by the Department of Water.

TO: Mr. Bransen Kawakami -2-
RE: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment
Hanamaulu, Kauai, Hawaii

July 17, 2017

3. Work hours and noise:

The State Department of Health has rules regarding "Community Noise Control." The contractor will be required to adhere to the rules. As described above, the work within Kuhio Highway must be done at night per State Department of Transportation requirements. The contractor will have to apply with the Department of Health for a variance to conduct their work at night. The contractor will have to take measures to minimize noise levels when they work at night. I do not know how many nights the contractor will need to complete the work within Kuhio Highway, but the work is fairly extensive and I would guess that they will need several weeks' time. The waterline connection work at the Ehiku/ `Elima intersection will most likely be limited to one night.

4. Access to driveway and house:

Access to your driveway and house will not be blocked by construction. There may be times when the traffic control flaggers will need to allow traffic to pass by your house and delay your entrance or exit, but it should be only momentarily.

5. Water supply:

There will be several waterline connections for this project. One of the connections is as described above at `Ehiku/ `Elima intersection, and there are two (2) more anticipated waterline connections within Kuhio Highway. The details of each connection have not been fully worked-out yet, however, it is likely that some of these connections will require temporarily shutting-off water to the area. The water shutdowns will be conducted by the Department of Water and the actual connection work will be done by the contractor. The Department of Water will follow their protocol for such water shutdowns including measures to minimize down-time and prevent brown water.

We expect to publish the complete Draft Environmental Assessment (EA) in August 2017, at which time you may download the document from the State of Hawaii Office of Environmental Quality Control (OEQC) website at <http://health.hawaii.gov/oeqc/>. There is a 30-day public input period after the Draft EA is posted by the OEQC.

Again, thank you for your input. If you have any further questions or concerns regarding the project, please feel free to contact me at (808)245-9591 or via email at bill@kodani.com.

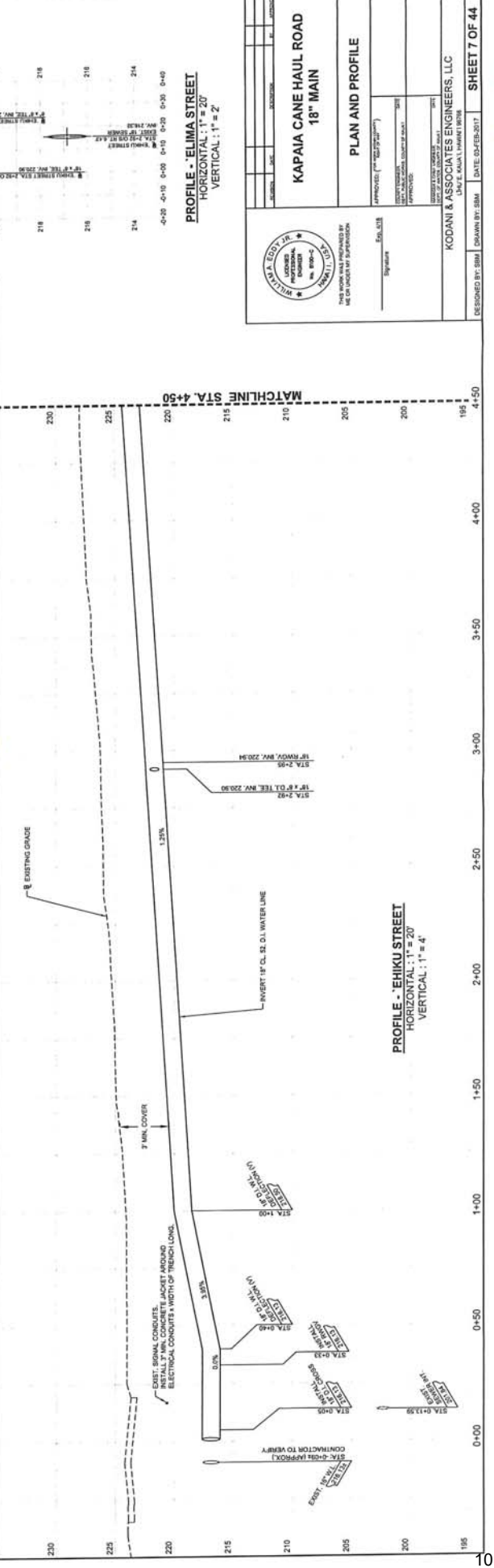
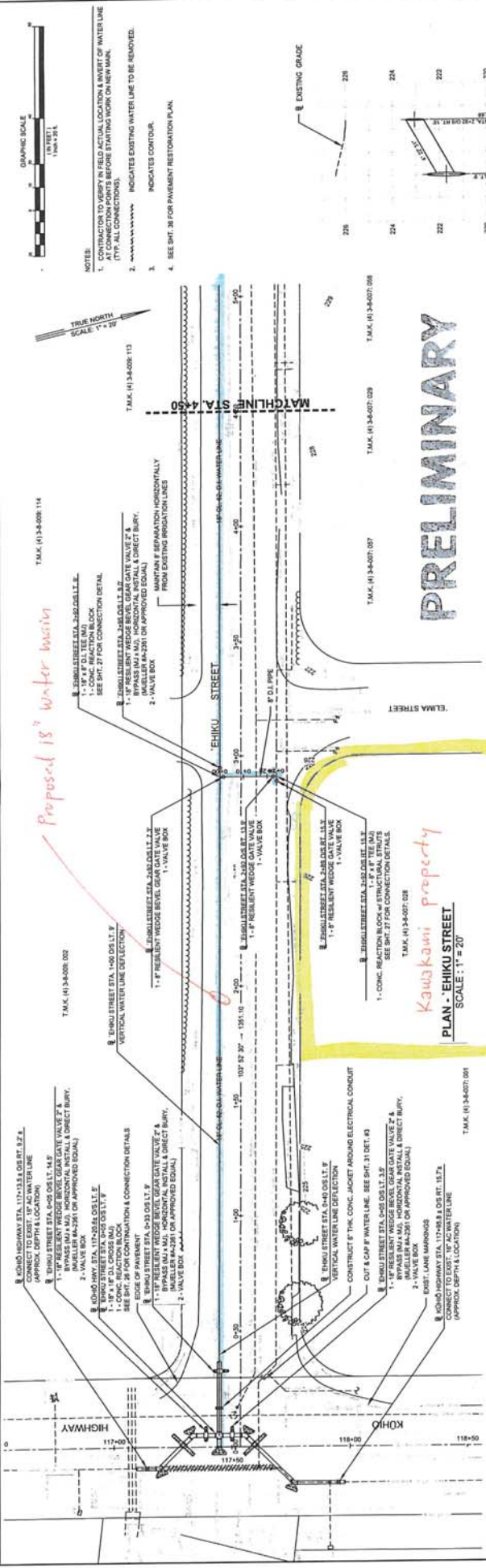
Sincerely,



William Eddy, PE
Vice President

Attachment

c: Department of Water with attachment



- NOTES:
- CONTRACTOR TO VERIFY IN FIELD ACTUAL LOCATION & INVERT OF WATER LINE BEFORE STARTING WORK ON NEW MAIN.
 - ALL CONNECTIONS SHALL BE MADE IN ACCORDANCE WITH THE FOLLOWING:
 - 1. 18" RESILIENT WEDGE GATE VALVE TO BE REMOVED.
 - 2. 18" RESILIENT WEDGE GATE VALVE TO BE INSTALLED.
 - 3. 18" RESILIENT WEDGE GATE VALVE TO BE MAINTAINED.
 - 4. SEE SHT. 36 FOR PAVEMENT RESTORATION PLAN.
 - INDICATES CONTOR.
 - SEE SHT. 36 FOR PAVEMENT RESTORATION PLAN.

PRELIMINARY

Kawakami property

		KAPAAI CANE HAUL ROAD 18" MAIN
APPROVED: (Signature) DATE: 06/28/2017		
PLAN AND PROFILE		
DESIGNED BY: 5888 DRAWN BY: 5888 DATE: 06/28/2017 SHEET 7 OF 44		

Attachment



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Hilarion Luis
4542 Ehiku St
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

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Sincerely,

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Vice President

Attachment
c: Department of Water with attachment

MEMO TO FILE

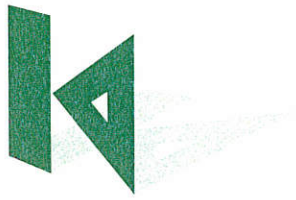
DATE: December 28, 2017

BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: Luis residence

NOTE: No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Robert Costa
4546 Ehiku St
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

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Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment
c: Department of Water with attachment

MEMO TO FILE

DATE: December 28, 2017

BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: Costa residence

NOTE: No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Gwyneth Calipjo
4550 Ehiku St
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

The County of Kaua'i, Department of Water (KDOW) would like to inform you of a proposed project along 'Ehiku Street that might impact you in some way. Kodani & Associates Engineers is preparing the subject Draft Environmental Assessment (DEA) on behalf of the KDOW and pursuant to Chapter 343, we are conducting the required pre-consultation. We respectfully request your input on this matter and will include any concerns you may have in the DEA document.

The proposed project generally consists of an approximately 9,000 foot long, 18-inch diameter, potable water transmission main along the existing 'Ehiku Street and the Kapaia Cane Haul Road from Kūhiō Highway to Ma'alo Road. The proposed transmission main will connect to existing KDOW 16" diameter mains on each end. KDOW seeks to improve transmission capacity in the existing Puhī-Līhu'e-Hanama'ulu water system and as such the proposed project is contained in the Department's comprehensive master plan entitled *Water Plan 2020*. Please find the attached project location map for your reference.

We respectfully request a response from you within 30 calendar days from the date of receipt. If we do not receive any comments within the 30 calendar days, we will take this as a response of no comment. Should you have any questions or require additional information, please contact me by email at bill@kodani.com or by phone at 245-9591. You may submit written comments via mail to our address below or email to me at bill@kodani.com.

Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment
c: Department of Water with attachment

MEMO TO FILE

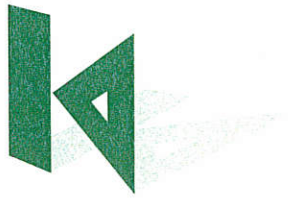
DATE: December 28, 2017

BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: Calipjo residence

NOTE: No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Jennifer Dunn
3282 Eono St
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

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Sincerely,

William Eddy, PE
Vice President

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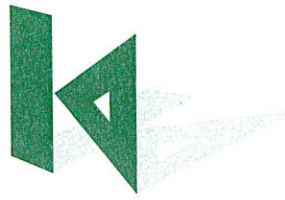
DATE: December 28, 2017

BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: Dunn residence

NOTE: No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Church of Jesus Christ of Latter-Day Saints
c/o Church Tax Division
50 E North Temple St Rm 2225
Salt Lake City, UT 84150

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

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Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment

c: Department of Water with attachment

MEMO TO FILE

DATE: December 28, 2017

BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: Church of Jesus Christ of Latter-Day Saints

NOTE: No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Dean Pigao
Po Box 3115
Lihue, HI 96766

**SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT**
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

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Sincerely,

William Eddy, PE
Vice President

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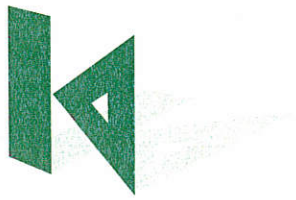
DATE: December 28, 2017

BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: Pigao residence

NOTE: No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Dennis Chan
4618 Ehiku Rd
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

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Vice President

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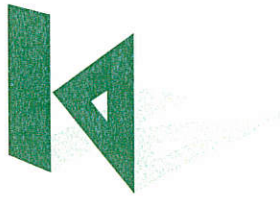
DATE: December 28, 2017

BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: Chan residence

NOTE: No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Henry Delgado
3280 Kanakolu St
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

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Sincerely,

William Eddy, PE
Vice President

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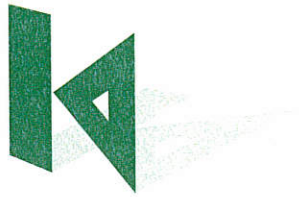
DATE: December 28, 2017

BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: Delgado residence

NOTE: No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

Honolulu Limited
3660 Waiialae Ave Ste 400
Honolulu, HI 96816

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

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Sincerely,

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Vice President

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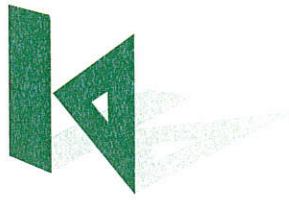
DATE: December 28, 2017

BY: William Eddy, PE, Kodani & Associates Engineers, LLC

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment

ADDRESSEE: Honolulu Limited

NOTE: No response has been received from the addressee to our May 26, 2017 pre-consultation request letter.



KODANI & ASSOCIATES ENGINEERS, LLC

May 26, 2017

VIA CERTIFIED MAIL

John & Deborah Barklow
Barklow Family Trust
Po Box 205
Lihue, HI 96766

SUBJECT: KĀPAIA CANE HAUL ROAD 18-INCH MAIN
PRE-CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT
Chapter 343, Hawaii Revised Statutes
Water Plan 2020 Project No. PLH-35B
Hanamā'ulu, Līhu'e, Kaua'i, Hawai'i

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Mahalo in advance for your attention to this matter.

Sincerely,

William Eddy, PE
Vice President

Attachment
c: Department of Water with attachment

June 10, 2017

William Eddy
Kodani & Associates Engineers, LLC
3126 Akahi Street
Lihue, HI 96766

RECEIVED

JUN 20 2017

Subject: Reply to May 26, 2017 Letter regarding Ehiku Street Water Main Project

Since we live right on Ehiku Street, we do have some questions on this matter:

1. When does this project start?
2. Approximately how long will the entire project take?
3. Approximately when would you be working on the main section of Ehiku Street?
4. Is the main going down the center of the road or off to one side?
 - a. If off the one side, which side?
5. Are you putting up dust shields?
6. What hours will you start and finish work each day?
7. Will we have daily access to our garage that is on Ehiku Street?

Some concerns:

1. Amount of additional trucks on Ehiku Street
2. Speed control of work trucks
3. Our windows are open for the trades to cool our house off and we are down wind of road so dust control is a huge concern for us.

We would appreciate timely response addressing all the above questions and concerns.

Sincerely,



John and Debbie Barklow
3267 Jerves Street
Lihue, HI 96766



KODANI & ASSOCIATES ENGINEERS, LLC

July 17, 2017

John and Debbie Barklow
Barklow Family Trust
P.O. Box 205
Lihue, HI 96766

SUBJECT: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment
Hanamaulu, Kauai, Hawaii

Thank you for your response to our letter in your letter dated June 10, 2017. This letter confirms that we have received your response and comments regarding this project. We will try to answer any questions and/or concerns you may have about this project.

The project is anticipated to begin no earlier than six (6) months from this month (July 2017). We are currently in the planning stages of this project, and will still need to go through official approval from various government agencies before the project can move forward.

The entire project is expected to take approximately nine (9) months. As far as when we will be working on specific portions of the road, we are, at this time, unsure. This will depend on the contractor and what their project schedule will look like. Once we have set a construction contract, we will receive a project schedule.

The water main is off to one side of Ehiku Street. More specifically, it will be on the side that is adjacent to your property.

We are not expecting that dust shields will be required because shields are not normally required for pipeline projects. However, the construction plans explicitly require the contractor to take measures to prevent dust problems. Dust control measures for these types of pipeline projects normally consist of no stockpiling of excavated material in the roadway, spray application of water onto the roadway and in the trench area, and no excavation during high wind times. The construction work, including dust control measures, will be inspected and monitored by the Department of Water.

In accordance with the County of Kauai's construction laws, work on Ehiku Street will only be performed between the hours of 8:00 A.M. to 3:30 P.M. Monday through Friday, except on holidays recognized by the County of Kauai, unless otherwise permitted in writing by the county engineer. However, work is also expected to be performed on the intersection of Kuhio Highway and Ehiku Street. Because Kuhio Highway is a state highway, the law requires that any work done on Kuhio Highway must be conducted as follows:

SUNDAY	10:00 P.M. – 12:00 MIDNIGHT
MONDAY THRU THURSDAY	12:01 A.M. – 5:00 A.M.
	10:00 P.M. – 12:00 MIDNIGHT
FRIDAY (MORNING)	12:01 A.M. – 5:00 A.M.

TO: John and Debbie Barklow
Barklow Family Trust
RE: Kapaia Cane Haul Road 18-Inch Main
Pre-Consultation for Draft Environmental Assessment
Hanamaulu, Kauai, Hawaii

-2-

July 17, 2017

We understand your concern in regards to this project and how it will affect you. Because we are still in the planning stages of this project, we are unsure of the amount of additional work trucks/equipment that will be on or around Ehiku Street. The contractor, however, will be required to follow all of the County's regulations regarding work within a County Right of Way, including dust and traffic control.

We expect to publish the complete Draft Environmental Assessment (EA) in August 2017, at which time you may download the document from the State of Hawaii Office of Environmental Quality Control (OEQC) website at <http://health.hawaii.gov/oeqc/>. There is a 30-day public input period after the Draft EA is posted by the OEQC.

If you have any further questions or concerns regarding this project, please feel free to contact our office at (808) 245-9591 or contact me directly at bill@kodani.com.

Sincerely,



William Eddy, PE
Vice President

c: Department of Water

Kapaia Cane Haul Road 18-inch Main
Draft Environmental Assessment

APPENDIX C

Archaeological, Historical, and Cultural Impact Assessment

For the

Kapaia Cane Haul Road 18-inch Main
Draft Environmental Assessment

Hanamā‘ulu Ahupua‘a
Puna District, Kaua‘i Island
TMK (4) 3-8-018:001; (4) 3-8-018:002,
(4) 3-8-15, (4) 3-8-07 and (4) 3-8-09

Prepared by
Dawn N.S. Chang, Esq.
Ku‘iwalu Consulting



January 2018

Prepared for
County of Kaua‘i
Department of Water

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Executive Summary

The County of Kauaʻi Department of Water (KDOW) is obligated to protect the reasonable exercise of customarily and traditionally exercised rights of Native Hawaiians to the extent feasible. This affirmative obligation is set forth in the Hawaiʻi State Constitution (Article XII, Section 7), State Laws (Hawaiʻi Revised Statutes Sections 1-1 and 7-1), and judicial precedent. Likewise the Hawaiʻi State Legislature through the enactment of Act 50, 2000 Haw. Sess. Laws, clarified that the preparation of an environmental assessment should identify and address effects of the proposed project on Hawaiʻi's culture, and traditional and customary rights.

The proposed project is the installation of an approximately 9,000 foot long 18-inch diameter water transmission main along the existing ʻEhiku Street and Kapaia Cane Haul Road (privately owned) from Kūhiō Highway to Māʻalo Road. The 18-inch main will connect to KDOW's 16-inch diameter water mains on each end. The purpose of the project is to address, (1) the hydraulically inadequate segment of the Kauaʻi Board of Water Supply water transmission line on Kūhiō Highway between Kapaia Bridge and Wilcox Medical Center, and (2) the need to improve fire flow capacity in the Līhuʻe-Kapaʻa water system. The subject alignment along the privately owned Kapaia Cane Haul Road was determined to be the preferred alternative because the private road had relatively low vehicular traffic flows and it will minimize traffic disruption to the public. It will also provide redundancy and reliability to the KDOW water system.

The purpose of the Archaeological, Historical, and Cultural Impact Assessments (CIA) was to gather sufficient information to assist KDOW in applying the *Ka Paʻakai O Ka ʻĀina v. Land Use Commission*, 94 Hawaiʻi 31, 7 P.3d 1068 (2000) (*Ka Paʻakai*) analytical framework to ensure the protection and preservation of valued cultural, historical, and natural resources, including customarily and traditionally exercised rights of Native Hawaiians. In this case, the process to gather the relevant information included, (1) site visit of the project area of Kapaia Cane Haul Road and relevant areas within the Hanamāʻulu Ahupuaʻa, (2) exhaustive archival research of moʻolelo (stories) of the place, historic maps, relevant archaeological and cultural resource reports within the Hanamāʻulu Ahupuaʻa and specifically within the vicinity of Kapaia Cane Haul Road, (3) consultation with the State Historic Preservation Division (SHPD), (4) distribution of over 25 cultural consultation letters requesting relevant information of which at least 19 individuals responded with relevant information, and (5) several small group and individual talk story sessions with those who have cultural or lineal connection to the Hanamāʻulu Ahupuaʻa, specifically Kapaia, and cultural practitioners.

Based upon the above process, the CIA addresses the *Ka Paʻakai* analytical framework as follows:

- (1) The identity and scope of valued cultural, historical, or natural resources that are found within the proposed project area, including the extent to which traditional and customary Native Hawaiian rights are exercised.**

Upon a thorough review of the archival research, previous archaeological studies, site inspection, and numerous written and oral cultural consultations, we were unable to document any cultural or natural resources within the proposed project area. The large amount of kula lands and the intense use of the land for sugar cultivation in Hanamā‘ulu may explain the absence of traditional Hawaiian resources. The pattern of plantation land use, i.e., is generally plowing and tilling the soil to at least 36-42 inches, rock removal, etc. destroyed any evidence of pre-contact land use. However, it is more likely that with over 150 years of continuous sugarcane cultivation, which may have impacted access by native Hawaiians, that there is at this time, no documentation or evidence of valued cultural and natural resources in the area. Further, the cultural consultations also consistently affirmed that there are no trails, paths, gathering of resources, or burials within the proposed project area.

However, the Kapaia Cane Haul Road is a historically significant resource. The cane haul road changed the traditional plantation community from isolated ethnic camps to a modern integrated community. In 1960, Līhu‘e Plantation transitioned hauling cane from railroad cars to big trucks on the cane haul road. With the use of the Kapaia Cane Haul Road, the plantation workers from the ditch workers, irrigators, to the sugarcane workers left the plantation camps to purchase homes and cars in the towns which provided them access to educational, economic, recreational, and political opportunities that were not available within the plantation camps.

In addition to the Kapaia Cane Haul Road, there are several historic operating plantation ditches and culverts that are still in existence and being maintained and used by Grove Farm and their leased tenants for agricultural purposes. These features are over fifty years old and are examples of the historic plantation era.

(2) The extent to which those resources – including traditional and customary Native Hawaiian rights – will be affected or impaired by the proposed action.

In this case, while we could not identify any valued cultural or natural resources within the proposed area, we are of the view that the Kapaia Cane Haul Road and the plantation era irrigation features are significant historic resources. The proposed project does not intend to adversely impact or alter the Kapaia Cane Haul Road as it is a functioning access road for Grove Farm, its sublessees, and agencies who use the road for access. In addition, the proposed project will not adversely impact the architectural integrity of the historic irrigation features because rather than excavate under them (and potentially jeopardize the functional use of the resource), the proposed construction will be to adjust the vertical profile of the proposed project to provide vertical clearance above the historic irrigation features within the shoulder of the Kapaia Cane Haul Road.

(3) The feasible action, if any, to be taken by the agency to reasonably protect Native Hawaiian rights if they are found to exist.

While the CIA has not identified any traditional and customary Native Hawaiian rights or practices that would be impaired by the proposed action, we recommend the following

mitigation measures should be adopted to avoid potential impacts to historic resources within the proposed project area:

1. In light of the recent Archaeological Inventory Survey (AIS) for the Solar City and Archaeological Assessment (AA) for the Adult Drug Treatment Facility that found no evidence of traditional subsurface resources, we would recommend no subsurface testing (i.e., AIS) be required for this project nor the requirement of archaeological monitoring along the portion of the project alignment that stretches from the intersection of Mā‘alo Road and the Kapaia Cane Haul Road to the edge of Hanamā‘ulu Stream Valley;
2. However, we would recommend full-time archaeological monitoring of the trenching along the section of the project that begins on the north side of Hanamā‘ulu Stream Valley, continuing across the valley and along the old railroad right of way down to ‘Ehiku Street to Kūhi‘ō Highway, in the event historic artifacts are discovered during trenching. The Aha Moku representative also recommended archaeological monitoring in these areas. The full-time monitoring could be reduced to spot checking in consultation with SHPD if the findings are uneventful and consistent with the soils of the Kapaia Cane Haul Road. If required by SHPD, an Archaeological Monitoring Plan (AMP) will be approved by SHPD before construction begins;
3. The archaeological monitor shall document the architecture of the plantation irrigation features, including the ditches, bridges, culvert, and couple of pani wai or sluice gates. The archaeological monitor will coordinate with Grove Farm for any architectural drawings of the features as well as include current photos; and
4. In the event iwi kūpuna (human burial remains) are discovered during the project construction, all work in the immediate vicinity shall cease and the Construction contractor will be required to promptly notify SHPD and the Kaua‘i Ni‘ihau Island Burial Council (KNIBC) Chairperson on the disposition of any iwi kūpuna, taking into consideration Uncle Val Ako’s mana‘o of keeping the iwi kūpuna within the Hanamā‘ulu Ahupua‘a or as close to where they were discovered.

Finally, we would like to acknowledge and extend our gratitude to those who were willing to share their mana‘o about their ‘ohana connection to Kapaia and Hanamā‘ulu, including Melanie Ching, Milton Ching, and Kaliko Santos; cultural practitioners including Aunty Barbara Say, Uncle Val Ako, and Sabra Kauka; the “old timers” who remembered fondly the plantation days including David Pratt, Allan Smith, Mark Hubbard, Wayne Ihara, Max Manera, Les Milnes, Lyle Tabata, Alvin Tanigawa, and Jan TenBruggencate; and those who had knowledge of the area including Pat Griffin, Nancy McMahan, Leimana DaMate and Chucky Boy Chock. We are so grateful for their willingness to talk story or provide a comment which brought life to the mo‘olelo and a modern day context to the rich history of Hanamā‘ulu and specifically the Kapaia Cane Haul Road.

Mālama Pono

SECTION 1 INTRODUCTION

1.1 Legal Requirements

The State and its agencies (including the Counties) are obligated to protect the reasonable exercise of customarily and traditionally exercised rights of Native Hawaiians to the extent feasible. These rights are grounded in the Hawai‘i Constitution (Article XII, Section 7), State Laws (Hawai‘i Revised Statutes Sections 1-1 and 7-1), and a long line of judicial precedent.

In 2000, the Hawai‘i State Legislature in enacting Act 50, 2000 Haw. Sess. Laws, found that they needed to clarify that the preparation of environmental assessments and environmental impact statements should identify and address effects on Hawai‘i’s culture, and traditional and customary rights. “The past failure to require native Hawaiian cultural impact assessments has resulted in the loss and destruction of many important cultural resources and has interfered with the exercise of native Hawaiian culture. The legislature further finds that due consideration of the effects of human activities on native Hawaiian culture and the exercise thereof is necessary to ensure the continued existence, development, and exercise of native Hawaiian culture.” 2000 Haw. Sess. Laws, Act 50.

In the same year, that Act 50 was enacted by the Hawai‘i State Legislature, the Hawai‘i Supreme Court in *Ka Pa‘akai O Ka ‘Āina v. Land Use Commission*, 94 Haw. 31, 7 P.3d 1068 (2000), set forth an analytical framework to assist government agencies to fulfill the State’s obligation to preserve and protect traditional and customary practices balanced against competing interests (including private property rights and other public interests). The analytical framework upon which government agencies are required to make “at a minimum” specific findings and conclusions as to the following:

- (1) To identify the scope of the valued cultural, historical, and natural resources in the petition area, including to the extent to which traditional and customary Native Hawaiian rights are exercised in the petition area;
- (2) The extent to which those resources-including traditional and customary Native Hawaiian rights will be affected or impaired by the proposed action, and
- (3) The feasible action, if any, to be taken by the agency to reasonably protect Native Hawaiian rights if they are found to exist.

Ka Pa‘akai, 94 Haw. at 19, 7 P.3d at 1084.

1.2 Methodology

As part of the EA process, Dawn Chang, principal of Ku‘iwalu Consulting, assisted the County of Kaua‘i Department of Water, in gathering information specifically related to traditional and customary Native Hawaiian practices and rights within the Hanamā‘ulu

Ahupua‘a, County of Kaua‘i, and specifically Kapaia. Ms. Chang utilized the following process in completing this review:

1. Ms. Chang, along with other members of Kodani and Associates Engineers, LLC and an archaeologist with Scientific Cultural Services (SCS) conducted a site visit of the project area and relevant areas within the Hanamā‘ulu Ahupua‘a;
2. Archival research was conducted by SCS on mo‘olelo of the area, historic maps, recent archaeological and cultural resource reports within the Hanamā‘ulu Ahupua‘a;
3. Ms. Chang consulted with the State Historic Preservation Division (SHPD) on topics of particular concern to SHPD;
4. Grove Farm, private landowner of the Kapaia Cane Haul Road, assisted Ms. Chang in coordinating a meeting of former Grove Farm employees and folks who may have personal historic knowledge of Līhu‘e Plantation, Grove Farm, Hanamā‘ulu, and Kapaia;
5. Ku‘iwalu emailed or mailed over 25 cultural consultation letters to individuals, ‘ohana, Native Hawaiian organizations, historic organizations, and agencies requesting information about the valued cultural, historical or natural resources that may be in the project area;
6. Ms. Chang held several individual talk stories and followed up with emails to those who responded to the cultural consultation letter; and
7. Ms. Chang, convened a small, group talk story session with those who have lineal or cultural connection to Hanamā‘ulu, specifically Kapaia, and cultural practitioners.

SECTION 2 PROPOSED PROJECT

2.1 Project Description and Purpose for the Project

The proposed project consists of an approximately 9,000 foot long, 18-inch diameter, water transmission main along the existing ‘Ehiku Street and Kapaia Cane Haul Road from Kūhiō Highway to Ma‘alo Road. The 18-inch main will connect to KDOW’s 16-inch diameter water mains on each end. KDOW seeks to improve transmission capacity in the existing Puhi-Līhu‘e-Hanamā‘ulu water system consistent with its *Water Plan 2020*. In 2001, KDOW completed the *Water Plan 2020*, which is a comprehensive plan that covers all of the water systems of the County of Kaua‘i, Department of Water from Kekaha to Hā‘ena. KDOW’s mission is:

Together, we provide safe, affordable, and sufficient drinking water through wise management of our resources and with excellent customer service for the people of Kaua‘i.

The purpose of the project is to address, (1) the hydraulically inadequate segment of the Kaua‘i Board of Water Supply water transmission line on Kūhiō Highway between

Kapaia Bridge and Wilcox Medical Center, and (2) the need to improve fire flow capacity in the Līhu‘e-Kapa‘a water system. The subject alignment along the privately owned Kapaia Cane Haul Road was determined to be the preferred alternative because the private road had relatively low vehicular traffic flows and it will minimize traffic disruption to the public. It will also provide redundancy and reliability to the KDOW water system.

2.2 Proposed Project Location

The proposed project is contained within an approximate one (1) acre of land – with part of it in the Līhu‘e town area and part in the agricultural area mauka of Līhu‘e. The proposed water main transmission main alignment will begin at Kūhiō Highway at the intersection with ‘Ehiku Street where it will connect to the existing KDOW 16-inch diameter water main. Traveling west from the Kūhiō/‘Ehiku intersection, the transmission line will be constructed primarily under the pavement and entire length of ‘Ehiku Street. Exhibit A is the proposed project location map. The transmission main alignment then continues onto the privately owned Kapaia Cane Haul Road in the northerly direction. There is an existing access gate (which is normally closed) at the ‘Ehiku Street and Kapaia Cane Haul Road juncture and Kapaia Cane Haul Road near ‘Ehiku Street and Mā‘alo Road. The majority of the proposed transmission line will be constructed under the existing pavement of Kapaia Cane Haul Road. The proposed transmission main will then terminate at the Kapaia Cane Haul Road and Mā‘alo Road intersection where it will connect to the existing KDOW 16-inch water main. Grove Farm privately owns both Kapaia Cane Haul Road and Mā‘alo Road at the Kapaia Cane Haul Road and Mā‘alo Road intersection. The affected TMKs are (4) 3-8-018:001, (4) 3-8-018:002, (4) 3-8-15, (4) 3-8-07 and (4) 3-8-09. Exhibit B is a series of photos of the proposed project alignment and its current existing condition.

SECTION 3 RELEVANT INFORMATION RELATED TO THE PROPOSED PROJECT AREA

3.1 Traditional or Pre-Contact (pre-1778) Background, including Mo‘olelo

Hanamā‘ulu and Kalapakī are adjacent ahupua‘a within the traditional district (moku) of Puna in southeast Kaua‘i. Hanamā‘ulu is bordered by the ahupua‘a of Wailuā to the north and Kalapakī and Haiku to the south. The ahupua‘a of Kalapakī has Nāwiliwili at its southern border. Both Hanamā‘ulu and Kalapakī ahupua‘a are part of the modern judicial district of Līhu‘e. Līhu‘e which means “cold chill” (Pukui, 1974) originally referred to the center of Līhu‘e town where the bank and post office reside but it was later (in 1861) used to describe the larger district (Rice, 1914:46). Hanamā‘ulu and Kalapakī were clearly inhabited prior to 1778 Hawai‘i. The mo‘olelo (“oral traditions”) and wahi pana (“storied places”) and early historic eyewitness accounts suggest settlement activities with landscapes containing agricultural remnants, heiau implying religious and other cultural practices, and nearby native forest resources.

Hanamā‘ulu means “landing, land section, village, bay, ditch, river, beach park, and birthplace of the hero Ka-welo, tired (as from walking) bay,” (Pukui et al, 1974:41). According to Wichman (1998:60) it is called “tired bay” since getting there was off the regular trail and one had to walk miles to get there. Hanamā‘ulu extends from the ocean east towards Wai‘ale‘ale with numerous streams flowing from it. Wichman (1998:60) mentions two of these streams; the “Wai-ahi (fiery water) stream flows into Wai-aka (reflecting stream). The stream was considered a kupua (the body of a supernatural being). A village was located on its banks and ‘o‘opu (fish) harvested from the stream.” These two streams flow into the Kapaia reservoir that feeds the Hanamā‘ulu Stream (or Kapaia Stream) and one of the major geographical features near the project area along with Kilohana Crater and Kalepa ridge. Handy (1972:425) describes the Hanamā‘ulu stream as “flowing from the side of Kilohana crater through a broad gulch in which there were many terraced flats, beginning about two and a half miles upstream. The large delta area where the stream flows into the bay undoubtedly was covered with lo‘i for wet-taro cultivation before this land was taken over for sugar cane. Much of the higher land now planted with cane must formerly have been used for growing sweet potatoes.” Hanamā‘ulu was also the source for coconuts planted at sea level, wauke (paper mulberry for clothing and bed clothes) on valley slopes, and olona (native shrub used for rope, nets, etc.) at higher elevations (Handy, 1940:50). On Hanamā‘ulu’s seaward boundary lies Ahukini that is named for a son (Ahukini-a-La’a) of La’-mai-Kahiki who came from Tahiti. More literally Ahukini means “altar for any blessings” (Pukui, Elbert & Mookini, 1974). The Ahukini heiau is located on the bluff overlooking the bay, it is a medium sized temple with only the foundations remaining (Thrum, 1906).

In one account of the legend of Kawelo, he is said to be born in Hanamā‘ulu (Fornander, 1918-1919 Vol. 2:2). After many battles with Aikanaka (his cousin), whom he eventually vanquishes, he retires to his parents’ old house in Hanamā‘ulu (Fornander, 1918-1919 Vol. 2:70-71). Hanamā‘ulu is also mentioned in the story of Pele, where, in a jealous rage she covers Lohiau (her lover) with lava. Two of Pele’s brothers bring him back to life and one brother transforms himself into a canoe and they sail to Kaua‘i landing at Ahukini. Lohiau then goes to Hanamā‘ulu where he found all of the houses closed save one where two men were making tapa. They all walk to Kapa‘a where Lohiau is eventually reunited with Hiiaka, Pele’s sister (Rice, 1923:7-17).

To the east of the project area is Kalepa ridge and its highest peak, Kalepa, which means “trader, merchant salesman, peddle and to trade, sell as merchandise, peddle or to flutter or wave” (Pukui et al, 1986:122). It literally means to “strike flag” which a salesman would do to signal items for barter. A heiau, Ka-lau-o-ka-manu (tip of the end piece of the canoe) was located at the base of Kalepa at the south end and thus its name. It was said to be used for human sacrifices and feared by travelers who hurried past it because of the bad smell (Wichman, 1998:61). Thrum (1906: 40) described the heiau as “a large walled heiau that stood above the present mill; destroyed about 1855. Of pookanaka class.” There are two stones beside the heiau and the story is that Chief ‘U’u-kani-pō was betrothed to Ka-lau-o-kamani, a chiefess of Hanamā‘ulu. ‘U’u-kani-pō went to see Ka-lau-o-kamani with his friend Ka-ipo-lei-manu. They were walking down a path toward Kalepa from Kilohana Crater when they encountered a woman who told them to

turn back. She told them not to go near Ka-lau-o-kamani but to go back toward the mountains to seek her sister, Moeapaki'i and marry her. 'U'u-kani-pō recognized her as Ka-lau-o-kamani's ghost and was determined to find out what happened to her. They hurried toward village but the stench was so strong they were overcome and turned into rocks. These rocks guard the path as a warning to travelers (Wichman, 1986:62).

Kilohana crater is a small collapsed shield volcano that straddles the ahupua'a of Hanamā'ulu and Haiku to the west. The name Kilohana means "vantage point" (Wichman, 1998:60). In the Legend of Kamapuaa, the warrior and a friend Limaloa journey from Kipu looking for the two daughters of Kaneiki. They come upon them at Kilohana in a valley overgrown with kukui trees where they were gathering kukui nuts (Fornander, 1959:230). Kamapuaa later defends Kaneiki in a battle with Makalii and his warriors. Kukui is also mentioned in the story of Kila, son of Mo'ikeha, who goes to Ra'iātea to bring back his father's foster son, La'a-mai-Kahiki. At each stop in Ra'iātea he encounters several questions, one is what is he (Moikeha) doing and where the kukui blossoms of Puna change; where the waters of Wailuā stretch out..." (Wichman, 2003: 31). Kilohana was also known for a particular kind of maile, maile ku (Fornander, V5, 1918: 616).

Kalapakī means "double-yoked egg" (Pukui et al, 1986:122) but the story connecting the egg and Kalapakī has been lost. Nāwiliwili stream flows through Kalapakī, it is so known because it defines a twisted path through the two ahupua'a that it separates. The Nāwiliwili delta and surrounding area that included offshore fishing, freshwater ponds, wet taro and sweet potato supported one of the 5 areas of population concentration on Kaua'i (Handy, 1972:269). "For 3 miles inland from the sea the Nāwiliwili River twists (wiliwili) through a flat valley bottom which was formerly all in terraces. Inland, just above the bay, three taro planters cultivate wet taro in a few small terraces. Most of the land is in pasture. There is one small cotton plantation and several small garden plots. For about a half mile below and a half mile above the mill, the valley is mostly filled with plantation camp and other structures, with many small clumps of bananas, some garden plots, and a few old breadfruit trees. The old terrace area extended half a mile up into the small valley that opens out northwest just above the mill. Approximately the last mile of flat valley bottom, before the river bed becomes a narrow gulch, used to be in terraces but is now pasture and ranch land." (Handy, 1940:67). Mā'alo – "to pass along, by, or alongside, as to overtake and pass a car; to transship; to pass through as land; (Pukui, 1986).

3.2 Historic or Post-Contact (post 1778) Period

After Captain Cook's arrival in 1778, other ships began arriving in Hawai'i to take on provisions and to partake in the sandalwood industry. The Hawaiian Spectator V2:1 1838 Jarves, J.J. "Sketches of Kaua'i" Jarves describes his journey to Wailuā Falls from Koloa and observes, "a richly diversified valley, bordered by two ranges of mountains, on whose distant sides herds of wild cattle can be seen feeding.-at times it rounds the base of some high hill then plunges into a deep ravine, and ascends on the opposite side, to table land, covered with high prairie grass, which sweeps the stirrups as you ride through it.

Shady groves of the tutui tree like scattered over its surface, like islands sleeping upon the bosom of some still lake. In the mountains of the left, distant cascades are seen, resembling silvery ribbons, as they force their way from cliff to cliff, and contrasting beautifully with the dark masses of foliage with which they are surrounded.”

A Tour of Kaua‘i in 1849 Private Journal of William DeWitt Alexander (Kaua‘i Historical Society, 1991:122) “a few miles further on we crossed the picturesque valley of Hanamā‘ulu. This valley is prettily bordered by groves of Kukui, koa, & hala trees, and is well cultivated with Taro. A fine stream flows through the midst of it, which makes a remarkable bend at this place like a horse shoe. We then traveled along the seashore at the foot of a range of hills through groves of hau, & among hills of sand....About eight o'clock we arrived on the banks of the Wailuā River.”

1850 History of Līhu‘e Mary A. Girven Rice (Kaua‘i Historical Society, 1991:47) Upon ascending from Nāwiliwili “the mauka lands consisting of the ridges running to the crater of Kilohana, were nearly all densely wooded with the indigenous koa, sandalwood, hao and aakea. Some of these groves were such dense growth that they were almost impossible to ride through. Upon the lower lands were groves of the beautiful Kukui and Hau. Even the first field upon which cane was planted was left partially standing in trees with the cane growing between and around the trees. This was the field of Halo.” “The Hawaiian village of Pualoki, consisting of thatched houses, extended from near the present cemetery....There were also large settlements of Hawaiians in Halehaka valley, Niumalu, Nāwiliwili and Hanamā‘ulu valleys.”

Paradise of the Pacific Oct. 1896 p147 Vol IX no. 10 Points of Interest on Kaua‘i “5 miles from Līhu‘e, over a road winding through populous valleys, between blooming cane fields and past wavy grass-covered hills, where droves of cattle are continually grazing, a loud roaring sound breaks the surrounding stillness...Wailuā Falls...leaving the falls, the traveler has the choice of two roads. The inland road, though the most romantic, for it passes through a lovely country, over undulating hills, and into wonderfully fertile valleys, can be made only on horseback, and in the company of a guide. The other road takes the tourist past Hanamā‘ulu, a settlement composed chiefly of the laborers employed in the Hanamā‘ulu sugar mill, past the mill and on between dense hau trees, until the mouth of the Wailuā river is reached.”

In an 1878 Hawaiian Government Survey map (Fig. 1) a trail is depicted that originated from Koloa to the western rim of Kilohana crater eventually intersecting with Mā‘alo Road at a point north of the project area. This trail mentioned by Ethel Damon in Koamalu who is recounting the description by Reverend Hiram Brigham in his book, *A Residence of Twenty-One Years in the Sandwich Islands*, published in 1847:

In 1824, when walking around the island from Waimea to counsel the people after the wreck of The Cleopatra's Barge, Rev. Hiram Bingham crossed from Hanapēpē, as has been seen, over the old upland trail back of Kilohana, and wrote of it as “a country of good land, mostly open, unoccupied and covered with grass, sprinkled with trees, and watered with

lively streams that descend from the forest-covered mountains and wind their way along ravines to the sea, - a much finer country than the western part of the island.” (Damon 1931: 401).

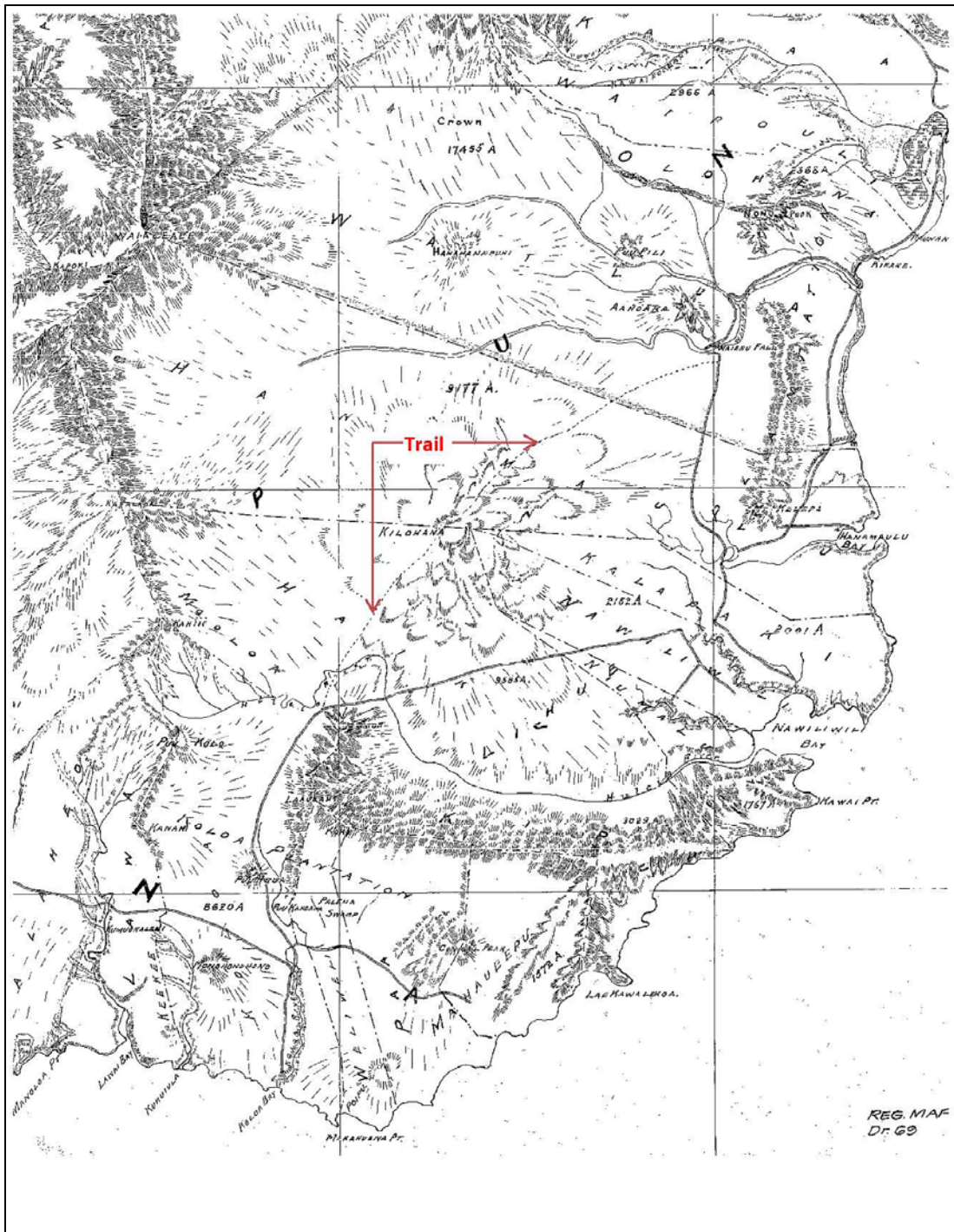


Figure 1: Portion of W.D. Alexander’s 1878 Kaua’i Government Survey Map showing Northern Trail around Kiloana Crater

3.3 Land Tenure

Land tenure in pre-contact Hawai‘i was a hierarchical system where the King owned all of the lands and divided it up among his high chiefs or warriors (*ali‘i / konohiki*). The high chiefs subdivided their land into parcels for their lower chiefs and further divisions were made to the tenants who farmed the land or commoners (*maka‘āinana*). All of the people who held land paid land taxes and service to the King. In 1846 Kamehameha III and his chiefs began the transformation from the traditional system of land tenure to one where the land was divided among the people with vested rights, namely, the King, the chiefs, and the tenants. The “Board of Commissioners to quiet Land Titles” was appointed to confirm or reject all claims to the land (Alexander, W.D. 1882). All of the land divisions were recorded in the Mahele Book (book of divisions) and the process which lasted until 1853 became known as the Great Mahele.

Victoria Kamāmalu was awarded a konohiki award that included the ahupua‘a of Hanamā‘ulu and the ahupua‘a of Kalapakī and is designated Land Commission Award (LCA) 7713:2. The project area is located entirely within this LCA as Līhu‘e Plantation began to acquire sugar land in the mid-1800s. The Kuleana Act of 1850 allowed the *maka‘āinana* to apply for their land claims. In Hanamā‘ulu 18 claims were made and 15 were awarded; in Kalapakī 13 claims were made with 12 granted (Table 1). All of these awards (listed in the following tables compiled from the Papakilo Database) were for lots located close to the streams and coastal areas of both ahupua‘a and removed from the project area. The awards are clearly shown in Hawai‘i Territory Survey maps (Fig. 2 and Fig. 3). No Kuleana awards were located in the vicinity of the project area.

Table 1: Hanamā‘ulu Land Commission Awards

Land Claim #	Claimant	Land Commission Award
3271	Lalahilimoku,	Leimoku 1 Ac 1 rood 21 rods
3371	Naehu	1.25 Ac 19 rods (Kapaia)
3423	Paka	1.50 Acs 33 rods
3426	Pelekane	1 Ac 17 rods
3558	Keke	3 rods 1 rod
3600	Keolanui	1.75 Acs 30 rods
3640	Kumakahaohao	1 Ac 1 rood 12 rods
3644	Kaulupa	1.25 Acs 23 rods
3647	Kapuohi	4 Acs 32 rods (Moala) 38 rods (Papuaa)
3648	Kala	1.25 Acs 30 rods
3649	Kamalo	1.75 Acs 20 rods
3650	Kaluhiwaha	3 rods, 35 rods

3653	Kolu	1 Ac 37 rods
3657	Niho	1 Ac 1 rood 13 rods
5089	Kuhaimoana	3 roods 17 rods
7713	V. Kamamalu	9,177 Acs (Ap2) ahp

Kalapaki Land Commission Awards

Land Claim #	Claimant	Land Commission Award
238 P	Kinipeki	1 Ac. 32 rods
3249	Hao	3 roods, 11 rods
3280	Wawae	1 Ac. 1 rood 18 rods
3408	Papaa	2.5 Acs 33 rods
3425	Paiki	1 Ac. 1 rood 36 rods
3637	Kauhailawa	2 Acs 1 rood 14 rods
3642	Kuolohu	3 roods
3643	Kukahiko	3 roods 24 rods
3907	Nakala	3 Acs 25 rods
7713:2	V. Kamamalu	2004 acres

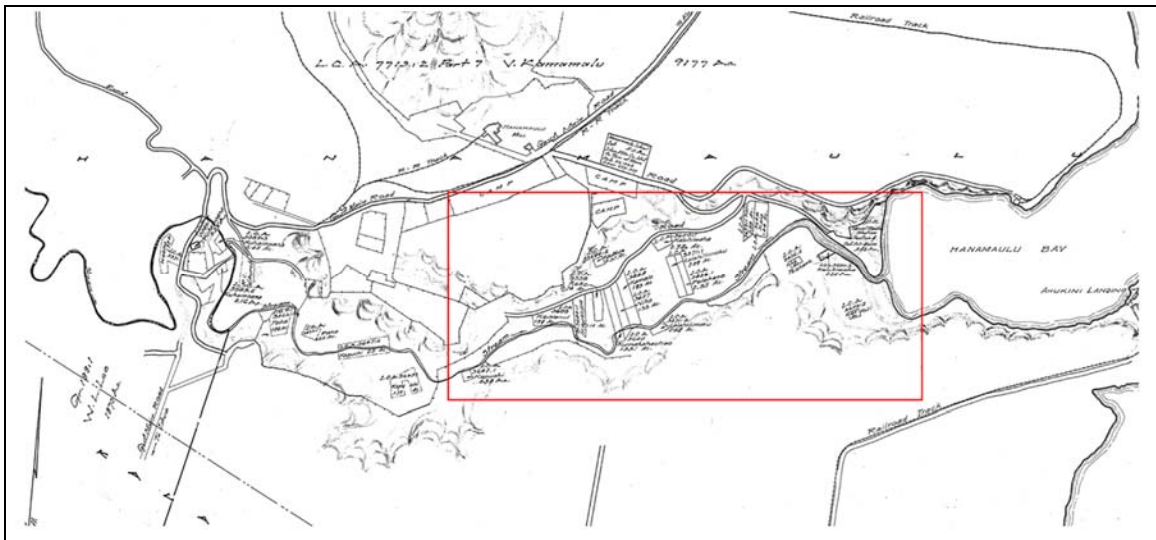


Figure 2: Portion of Hawai'i Territory Survey Plat 3046 with L.C. Awards granted in Hanamā'ulu.

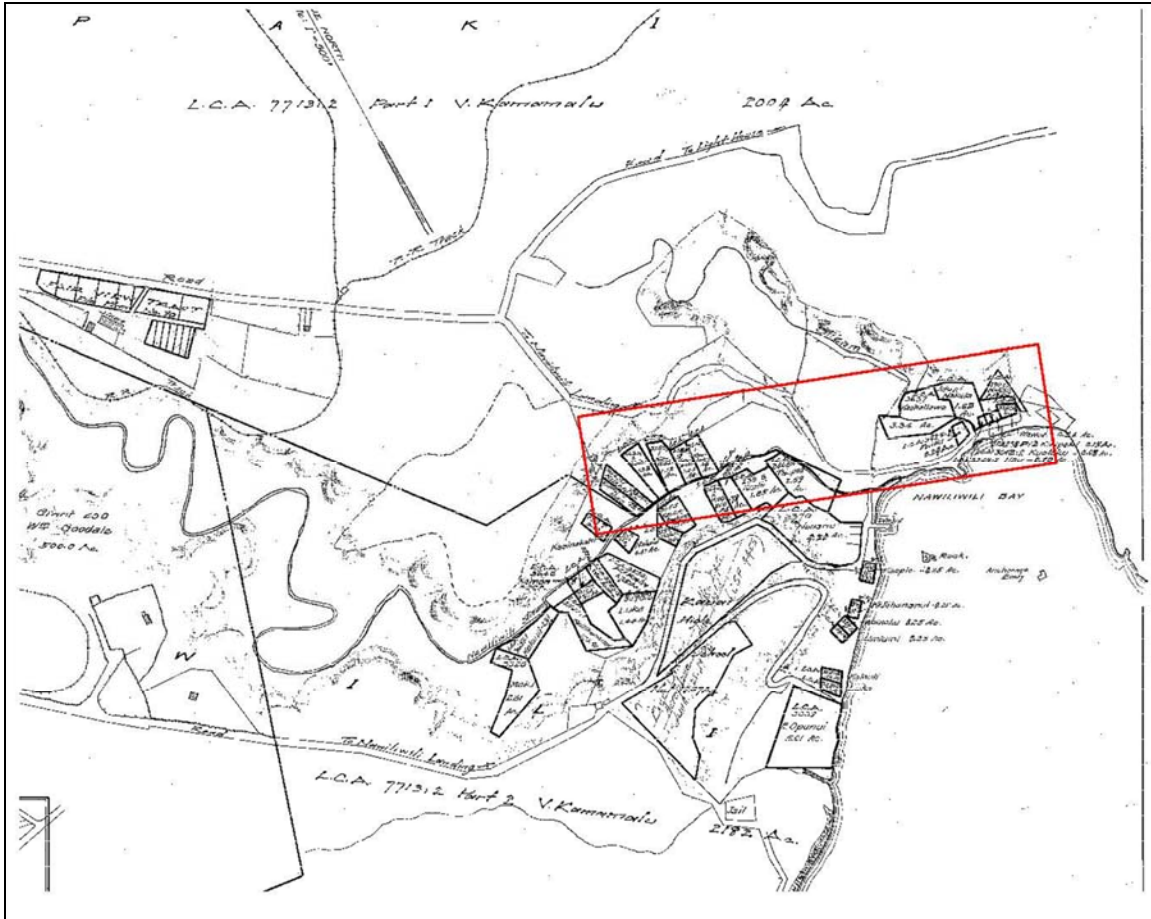


Figure 3: Portion of Hawai'i Territory Survey Plat 3047 with L.C. Awards granted in Kalapakī.

3.4 Līhu'e Plantation

In 1849 a partnership was formed by Charles Reed Bishop, Judge William L. Lee, and Henry A. Peirce. It was known as the Henry A. Peirce Company with H. Hackfield serving as agents. By 1857 the Nāwiliwili mill was in use and the Līhu'e Ditch, the first irrigation ditch in Hawai'i, was built by William Harrison Rice who later became the plantation manager. Paul Isenberg became the manager in 1858 and remained at the helm for 25 years. In 1859 the company name was changed to Līhu'e Plantation. In 1870 when Victoria Kamāmalu died, Isenberg purchased all of her land in the ahupua'a. Under the auspices of Isenberg the original 3,000 acres of Līhu'e Plantation increased through the purchase of 300 acres at Ahukini in 1866; 17,000 acres purchased at Hanamā'ulu in 1877 which included a water source; and a lease of 30,000 acres at Wailuā in 1878. In 1877 the Hanamā'ulu mill was added.

At the turn of the century many plantation workers were brought in to support the industry, Japanese, Portuguese, Korean and Puerto Rican and they were, in turn, supported with housing and health benefits by the plantation. Housing areas were divided along ethnic lines and/or according to your job. Thus not only did Japanese,

Filipino, or Okinawan Camps exist but there were also camps that were located in close proximity to areas because transportation was limited. Workers and families were located at ditches, reservoirs, landings, stables, powerhouses, etc. to help maintain those functions. The following table (Table 2) is a list of camps compiled from Lo's (2006) website detailing oral accounts of the camps from former residents (1940s-1950s).

Table 2: List of Līhu‘e Plantation camps or settlements in the vicinity of Hanamā‘ulu and Kalapakī

Camp	Location	Ahupua‘a
Up Camp	Behind Hanamā‘ulu store	Hanamā‘ulu
Middle Camp	Where Shell Station is located	Hanamā‘ulu
Down Camp	In the Valley near Hanamā‘ulu beach	Hanamā‘ulu
McKeever’s Neighborhood Assistant Manager 1930-1945	Where Kaua‘i Memorial Gardens & Funeral home is located where Mā‘alo Rd. begins	Hanamā‘ulu
Kapaia Camp	Near Immaculate Conception Church.	Hanamā‘ulu
Up Kapaia Camp	Behind Immaculate Conception Church.	Hanamā‘ulu
Pukaki Camp Filipino Camp of workers who weeded with hoes	Above McKeever’s to the right of Mā‘alo Road	Hanamā‘ulu
Camp 9 Filipino and Japanese ditchmen	A half mile off of Mā‘alo road, three miles beyond McKeever’s.	Hanamā‘ulu
Aii Camp (Camp 3) Japanese and Filipino reservoir men	Below Aii Reservoir	Hanamā‘ulu
Lower Powerhouse	A dirt road to the left side of Mā‘alo Road beyond Aii Camp and before Nagao’s place.	Wailuā
Nagao’s Place A lone farmer who cared for the cane fields and raised vegetables	Above Aii Camp approaching Wailuā Falls	Wailuā
Peter Christian Camp Field Supervisor	At Wailuā Falls beyond the south end of a bridge that once spanned the falls.	Wailuā
Waterfalls Camp (Camp 6) Hanamā‘ulu ditch maintenance (10 miles)	Above Wailuā Falls, across the old bridge and a mile up	Wailuā

Upper Powerhouse Power plant man and grounds maintenance man.	Off of Mā‘alo Road past Tanaka Reservoir. At the end of Powerhouse road.	Hanamā‘ulu
Onuma’s Place One house camp	One mile above Tanaka Reservoir	Hanamā‘ulu
Chutaro Inouye’s Place Ditchman	South of powerhouse	Hanamā‘ulu
Fujii’s Place Ditchman	1-1/2 miles above Inouye’s Place	Hanamā‘ulu
Stable Camp For oxen and horses	Above Waterfalls Camp	Hanamā‘ulu
Okinawa Camp Reservoirmen	At Okinawa Reservoir, west of Kalepa Ridge Road and east of Okinawa Cane Road	Hanamā‘ulu
Ahukini Camp Men supporting shipping operations	South side of Hanamā‘ulu Bay	Hanamā‘ulu
Līhu‘e Camp	Above Līhu‘e mill at the site of Līhu‘e Town Tract “A”	Kalapakī
Kalapakī (Kilipaki) Camp	South of Līhu‘e Mill	Kalapakī
Haleko Road European employees	Near Līhu‘e Mill	Kalapakī

Initially in the second half of the 18th century Līhu‘e Plantation transported all of their harvested cane to the mill via ox cart along numerous pathways and roads. The carts gave way to railways which operated on permanent and portable tracks in the 1890s (Condé and Best 1973:127). The plantation created permanent mainline tracks across the plantation. Portable tracks were moved around the plantation as needed to transport recently harvested cane from various fields to the mainline which then hauled the cane to the mill. In the annual report for 1957 the Harvesting and Transportation Department reported that, “All cane came off by portable track except 713 acres...” (Condé and Best 1973:167).

As the last Hawaiian sugar plantation still using trains to haul cane, Līhu‘e Plantation began considering converting from railroad to trucks in 1956. “By 1957 the company was salvaging a part of their plantation railroad, which was being supplanted by roads laid out for the most part on or close to the old rail bed” (HSPA). In 1958 the railroad and trucks were hauling cane to the mill, “278,933 tons vs 463,792 tons by trucking” (Condé and Best 1973: 167). By 1959 the transition was completed. All roads that crisscross the plantation were used to haul cane by one method or another. Various plans and maps show the evolution of these roadways. Some were permanent and others changed with the

different modes of transportation. Also included are maps that illustrate the change of the modes of transportation and the size of the plantation surrounding the project area.

Hawaiian Government Survey map of 1878 (Fig. 1) shows a landscape untouched by sugar cultivation as compared to the 1900 Līhu‘e Plantation by Monsarrat (Fig. 4)¹ which is already depicting cane field sections. This map also shows the Kapaia Cane Haul road going to the reservoir (Mella or De Mello reservoir) with train tracks on top of the road and continuing on in north westerly direction then turning to the south ending on the west side of the mill in Nāwiliwili gulch. A 1941 Līhu‘e plantation map (Fig. 5) shows the even further field subdivisions and the railway lines are now removed from the Kapaia Cane Haul Road and appear further south. The train no longer enters the plantation via the ‘Ehiku/Kapaia route but traces a more northerly route from the mill. In the latter two maps, a road to the De Mello (also known as Mella) reservoir is present as the precursor to the Kapaia Cane Haul Road. The current alignment (Fig. 6) of the Kapaia Cane Haul Road now veers to the north to meet Mā‘alo Road. USGS Aerial photographs confirm that this change took place between 1951 (Fig. 7) and 1960 (Fig. 8), more likely in 1959 at the time cane haul trucks were replaced trains.

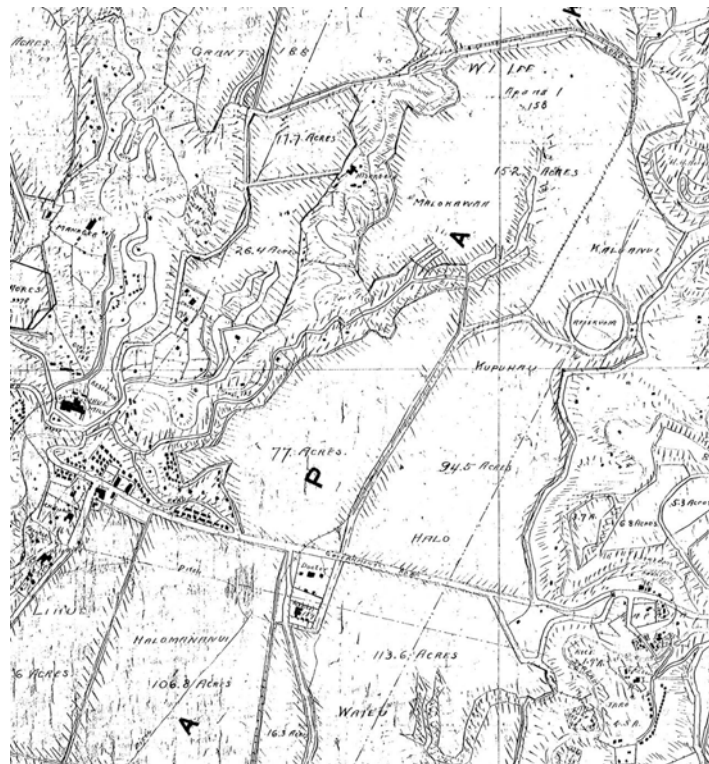


Figure 4: Portion of M.D. Monsarrat’s 1900 Map of Līhu‘e Plantation showing Rail Line situated over future portions of the subject Kapaia Cane Haul Road.

¹ Figures 4, 5, 6, 7, and 8 on Exhibit G which is the *Archaeological Field Inspection and Archival Research for the Kapaia Cane Haul Road 18-inch Main Project*, prepared by Scientific Consultant Services, Inc, January 2018, include an overlay in red depicting where the subject portions of the Kapaia Cane Haul Road would be located for ease of reference.

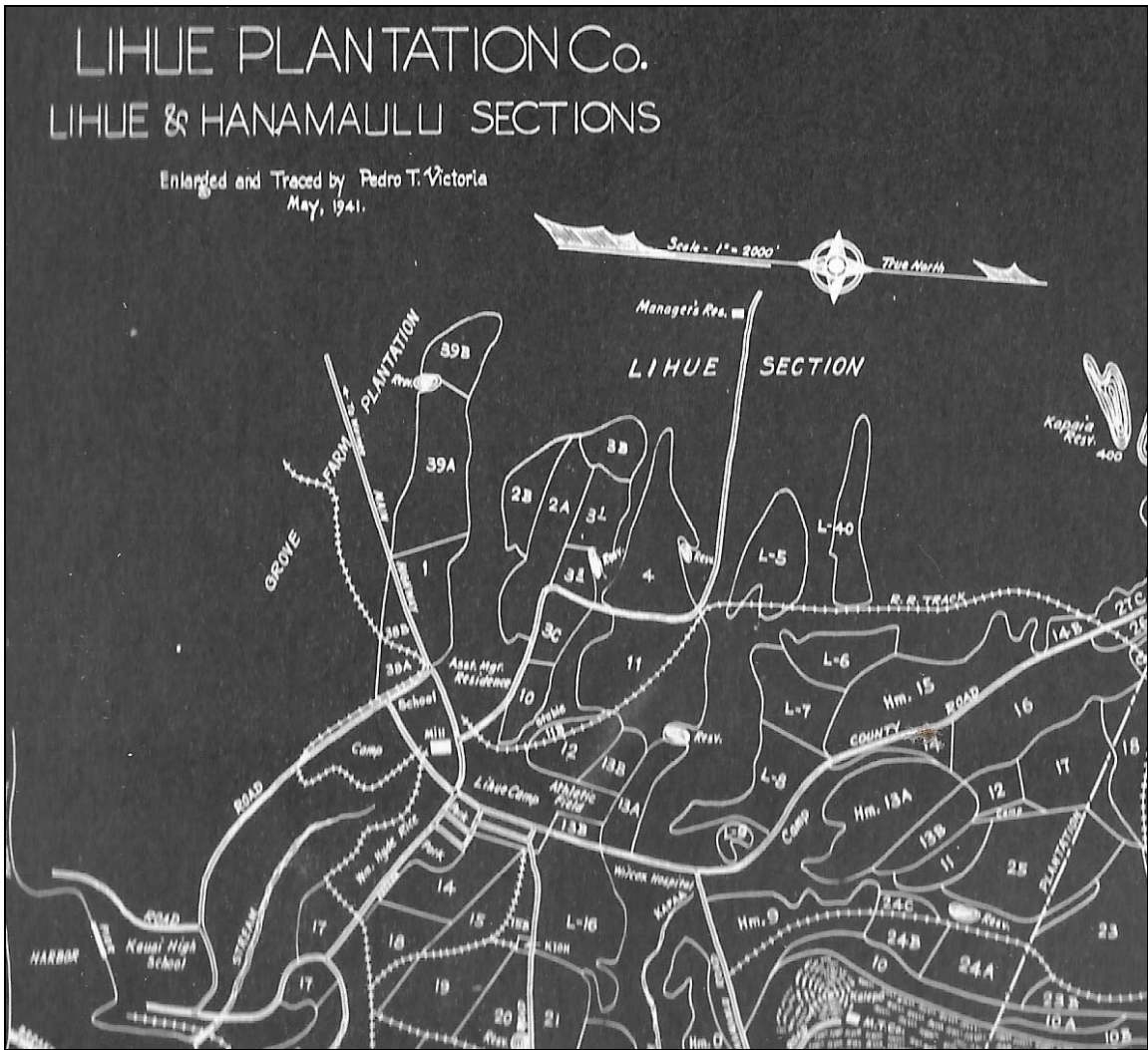


Figure 5: Enlarged Lihue Plantation Company Field Section Map 1941 (Condé and Best 1973:168)

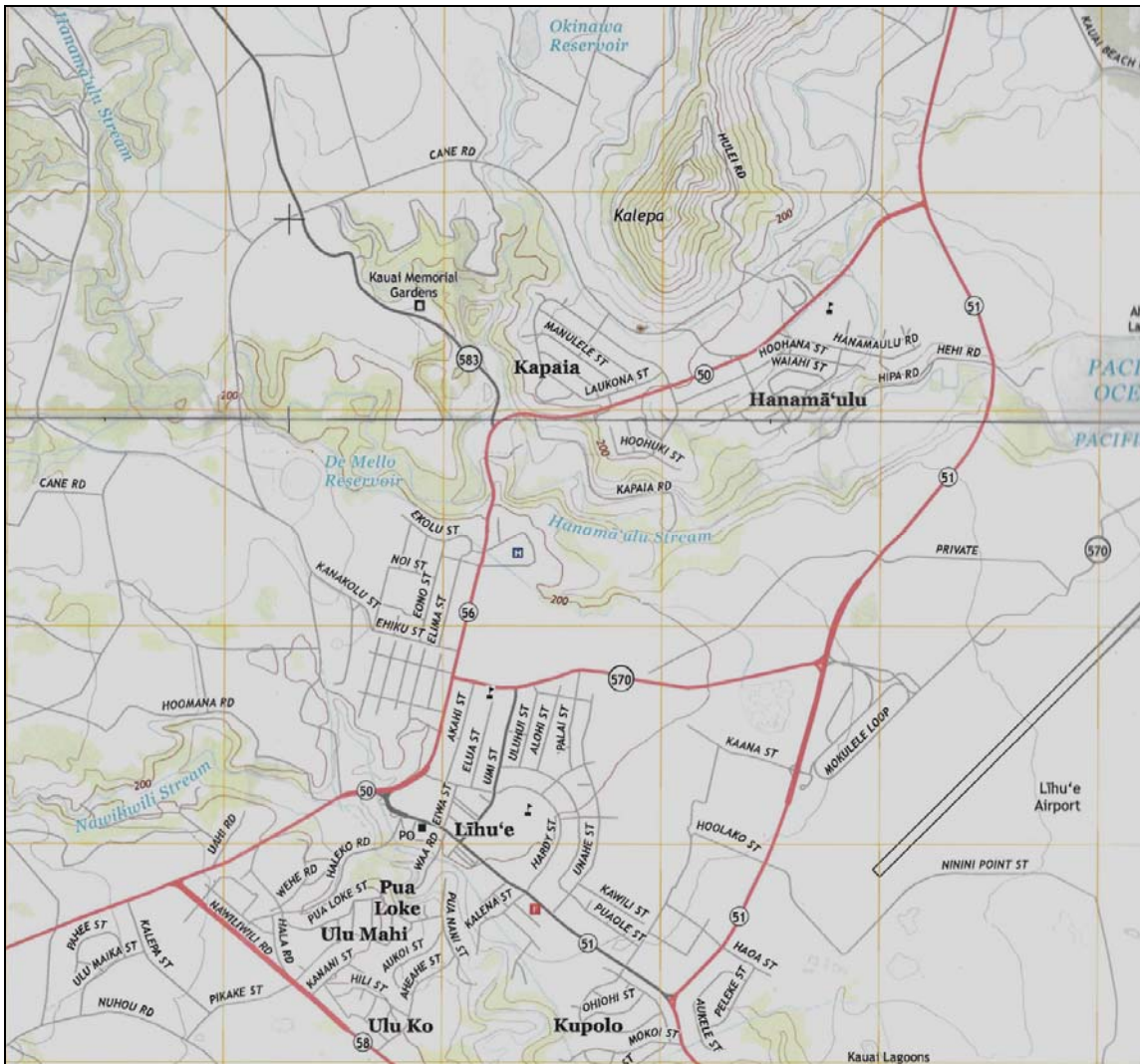


Figure 6: Portion USGS 7.5 Minute Series Topographic Maps of Lihu'e and Kapa'a Quads, 2013



Figure 7: 1951 USGS Aerial Photo Kapaia Cane Haul Road with Train Tracks.



Figure 8: 1960 USGS Aerial Photo showing Kapaia Cane Haul Road as a Truck Route.

Līhu‘e Plantation developed an extensive irrigation system. Under engineers G. N. Wilcox and later, Joseph Hughes Moragne and others, the system grew to “51 miles of ditch and eighteen intakes” (Wilcox 1996:68-70). As the years passed and the plantation grew new agricultural technologies were adopted to increase yield. O’Day and Linde (2014) report that in recent years, “Sugar cultivation became a highly mechanized process involving multiple steps using heavy equipment. Preparation of soils involved deep ripping that broke hard pan and lifted and shattered clay soils to 48 inches below surface. Fields were then disked to 36 inches to breakdown larger clods. A finish disk and drag rail was then used to 18 inches to further condition the soil before planting. Planting involved the use of D6 or D7 Caterpillar tractors fixed with plows to cut furrows up to 24 inches deep to channel irrigation water through the fields.

Aluminum flumes were installed in areas with slopes greater than 5 percent and catchment basins were excavated at the edge of fields to contain the runoff of open irrigation water. After two years of growth the cane was harvested with a Caterpillar D8 crawler and new roads were cut to allow access to haulers. The cane haulers weighed

over 100 tons and severely compacted the soil during each harvest. This necessitated deep ripping prior to the planting of each crop starting a new two-year harvest cycle.”

The plantation introduced many factors that changed the landscape of Hanamā‘ulu and Kalapakī; ditches and irrigation systems were built to water crops, the lands were cleared and subdivided to accommodate different transportation systems, and new industrial techniques were used to prepare the soil for planting. All of these factors altered the land and destroyed much of the evidence of settlement prior to the 1850s.

3.5 Modern or Current Period

Today ‘Ehiku Street (Fig. 9) is bordered by Līhu‘e Village Park, the Church of Jesus Christ of Latter Day Saints and the Isenberg Subdivision on the north. To the south is the subdivision of Līhu‘e Town Tract “A.” This map does not show the new alignment of the Kapaia Cane Haul Road which is the extension of ‘Ehiku Street. In the 50s and 60s Līhu‘e Plantation under its parent company American Factors (AmFac) “embraced the concept of urban renewal by radically redesigning the town core,” (Griffin, 2014:16). In 1946 houses in the Isenberg Tract were made available to employees. In 1957 Līhu‘e Plantation announced a home sales plan for Līhu‘e Town Tract “A” (Garden Island 1957).



Figure 9: Tax Map Key 3-8-03 with Ehiku Street and Adjacent Residential Areas.

The Athletic Field that is shown on the Līhu‘e Plantation Map (Fig. 5) appears to have been subdivided into the Church of Jesus Christ of Latter Day Saints, the Isenberg Recreation Center (park) and Līhu‘e Village Park. The church grounds were purchased from Līhu‘e Plantation in 1955 with a dedication in 1969 (Garden Island 1969). The property included the “Isenberg Gymnasium,” which was raised before construction of the church began. Isenberg Park changed hands shortly after 1973 when the county received a grant to purchase the property from AmFac (Garden Island 1973) and to construct a new park with baseball, football, and basketball accommodations as well as a neighborhood center. The park was completed and dedicated in January 1979 (Garden Island 1979). The Līhu‘e Village Park area adjacent to the park and church was probably developed shortly after the file plan (subdivision) map was approved by the Bureau of Conveyances in 1988 (State Surveyor File Plan 1936).

Immaculate Conception School is located just north of ‘Ehiku Road as one travels west out of the subdivision. The former school faces Isenberg Park across Kanakola Street. The school and convent opened its doors on Sept 4, 1951 (Garden Island 1951). It closed at some point between 1976 when it had a 25th anniversary (Garden Island 1976) and 1997 when it was again operating as St. Francis school (Garden Island 2001). This endeavor lasted 4 years and it is currently still used as a convent with nonprofit organizations renting out space. These nonprofit organizations include, but are not limited to, Kaua‘i Economic Opportunity, the Cancer Society, Lawai International and Happy Science.

3.6 Previous Archaeological Investigation - Subsurface Testing along the Kapaia Cane Haul Road²

While there were no specific archaeological studies of the proposed project area along Kapaia Cane Haul Road, there were two recent studies, on two separate properties at the north end of the proposed waterline, within close proximity of the proposed project area. In both studies, subsurface trenching was included and they found no cultural materials, either pre-contact or post contact, of significance.

The first archaeological inventory survey (AIS) was conducted by Cultural Survey Hawai‘i (CSH) in July 2016 for the Kapaia Solar Photovoltaic and Battery Energy Storage Project, Hanamā‘ulu Ahupua‘a, Lihū‘e District, Kaua‘i, TMK: [4] 3-8-002:002 por. and [4] 3-8-003:001 por. CSH produced an AIS for Solar City in 2016. The 46.5 acre parcel is located approximately 500 feet northwest of the Kapaia Cane Haul Road near the intersection of the Cane Haul Road and Mā‘alo Road. This is at one end of the proposed project area. CSH conducted subsurface testing at six locations on the parcel. Five backhoe-testing excavations (T-1 through T-5) were distributed throughout the project area to provide maximum coverage. The test excavations measure an average of 8.3 m long and 1.2 m wide with the base of the excavation determined by the presence of sterile and undisturbed natural deposits ranging from 1.5 m to 1.8 m. The water table

² For a listing and description of the previous archaeology, see Exhibit G the *Archaeological Field Inspection and Archival Research for the Kapaia Cane Haul Road 18-inch main Project*, prepared by Scientific Consultant Services, January 2018.

was not observed during subsurface testing. No subsurface historic and cultural materials were present or observed during the course of the excavation. The observed stratigraphy includes an 18 to 50 cm deep plow zone (Stratum I) associated with the former sugarcane production in the area. The plow zone overlies a naturally deposited silty clay loam B horizon (Stratum II). The results of the individual test excavations can be found in the Final AIS dated July 2016. However, a single surface historic site SHIP 5-30-08-2311 was located. This is an irrigation ditch that ran diagonally across the property in a NW to SE direction; indicated in the map by the blue line dividing the project area shown in pink.

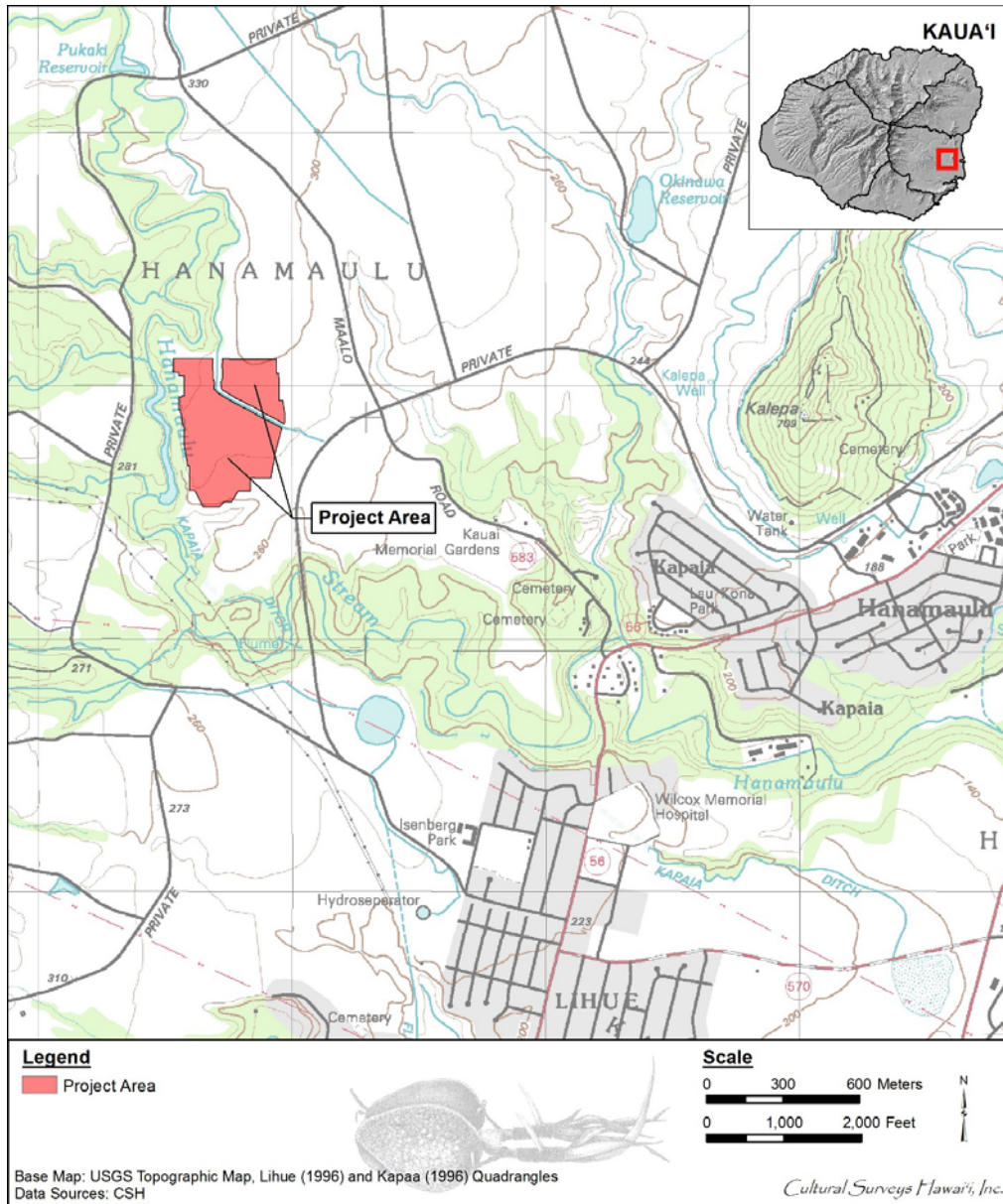


Figure 10: Location of Solar City Project Parcel near the intersection of Mā‘alo Rd. and Kapaia Cane Haul Road (labeled private).

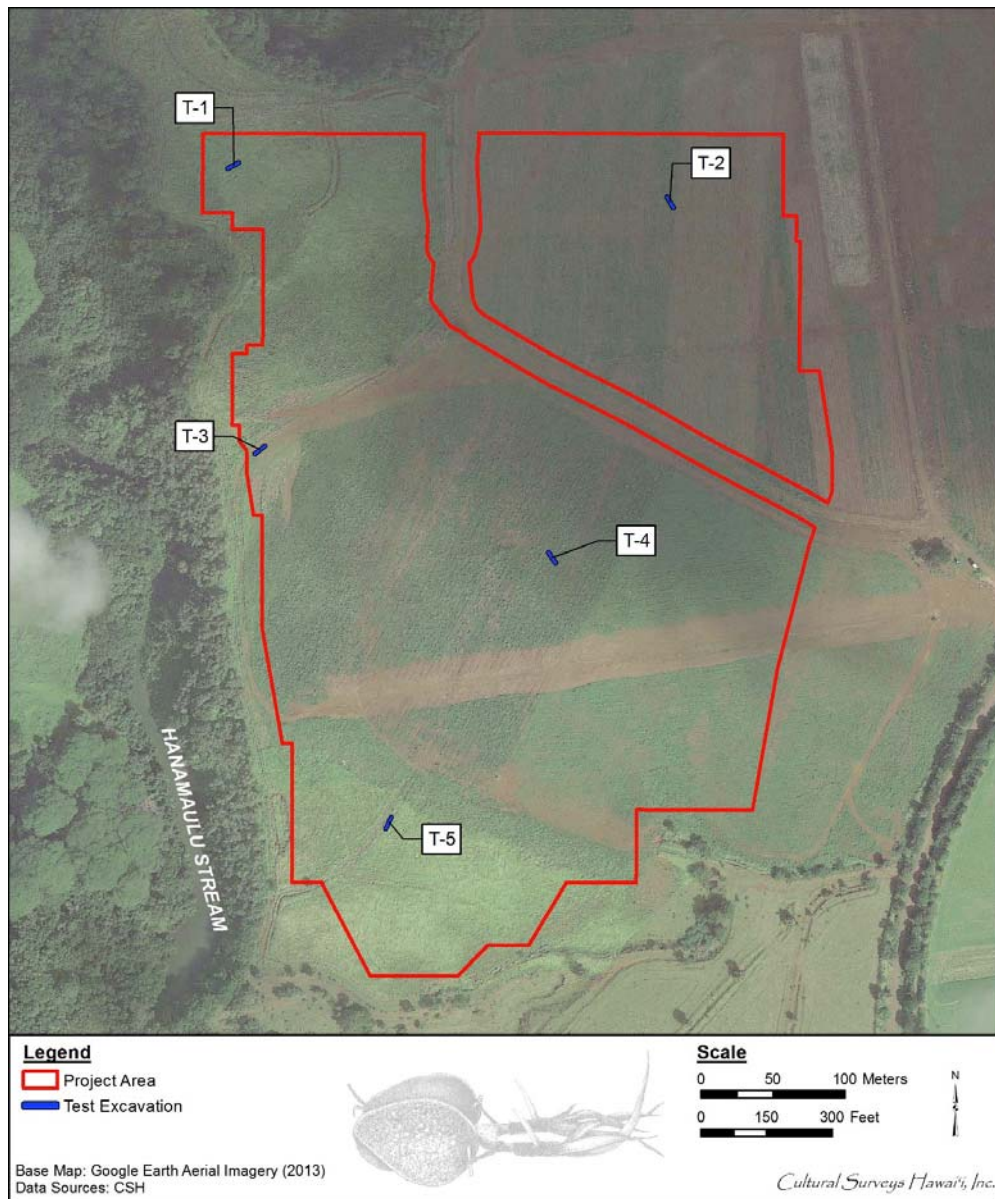


Figure 11: Solar City trench locations with Kapaia Cane Haul Road in the lower right hand corner. (From Cultural Surveys AIS report, Page 41.)

The second archaeological assessment (AA) was conducted by SCS in 2016 for the County of Kaua'i Adolescent Treatment and Healing Center³ on a 5-acre parcel at the south east corner of the intersection of Ma'alo Road and Kapaia Cane Haul Road. SCS conducted a full pedestrian survey of the project area. SCS also excavated eight representative trenches (ST-1 through ST-8) on the 5 acre parcel. "No archaeological sites were identified during fieldwork. As such, this report is being written as an Archaeological Assessment, an abbreviated Inventory Survey report. Subsurface testing

³ Which is the same project that is also referenced in Exhibit G as the Adolescent Drug Treatment Facility.

predominantly revealed previously disturbed soil layers from many years of cane cultivation, as well as imported coral and sand mixed fill throughout. The coral and sand were most likely used for soil preparation and mixed by mechanical tillers during past cane production years. No further archaeological work is recommended for this parcel.”

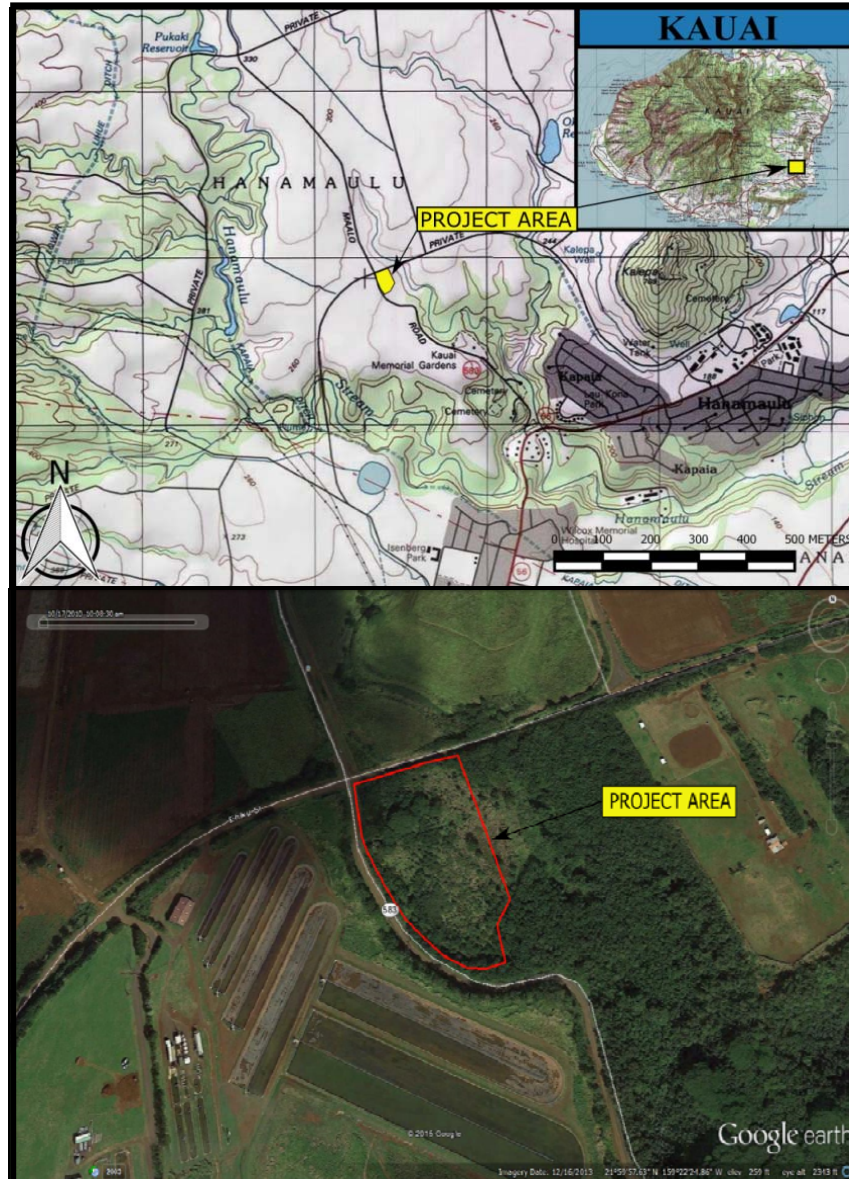


Figure 12: Project area at the intersection of Cane Haul Road (misabeled as ‘Ehiku St) and State Road 583 or Mā‘alo Rd.

The SCS AA specifically provides that they mechanically excavated eight stratigraphic trenches in the project area. No traditional or historic-period cultural deposits, artifacts, midden, or skeletal materials were identified during the testing. Stratigraphy consisted of Līhu‘e silty clay (LhB and LhC) as well as Līhu‘e gravelly silty clay (LIB) (see Foote *et al.* 1972). Sugarcane has been the preferred crop for this location and because of this, the soil has been heavily worked through time. This reoccurring soil preparation year upon

year for sugarcane production, has resulted in mixed strata. The stratigraphic sequence also showed the inclusion of non-naturally occurring soils, such as sand and coral, being imported to this location for soil health. These occurred in three of the trenches. Trench locations are shown below.”



Figure 13: Trench locations.

SECTION 4 IDENTIFICATION OF VALUED CULTURAL, HISTORICAL, AND NATURAL RESOURCES

4.1 Cultural Consultation Letters

The most important component of the CIA is consulting with the community, in particular, cultural consultation with ‘ohana or cultural practitioners from the project area or within the ahupua‘a. While not always possible, but considered a gift when ‘ohana, those people who have a lineal (direct ‘ohana connection to the project area) can share their mana‘o about valued resources, practices (both past and present), and traditional gathering that may have existed at one time or that currently exists. The cultural consultation can be with recognized native Hawaiian organizations, i.e. Aha Moku, Office of Hawaiian Affairs, Kaua‘i Ni‘ihau Island Burial Council, Historic Societies, etc.

In this case, Ku‘iwalu utilized a variety of methods in seeking mana‘o from people who may have valuable information about traditional and customary practices that may have existed within the Hanamā‘ulu Ahupua‘a and specifically along the Kapaia Cane Haul Road. Ku‘iwalu emailed (if we had their email address) or mailed over 25 CIA letters that described (1) the proposed project, (2) the project location, (3) the purpose of the CIA, and (4) requested specific information to conduct the *Ka Pa‘akai* analysis. Exhibit C is a table of the names and organizations who were contacted by email, mail, or personal talk story.

4.2 Cultural Consultation Process

Ms. Chang utilized the following process to gather information, specifically related to traditional and customary Native Hawaiian practices and rights within the Hanamā‘ulu Ahupua‘a and specifically Kapaia.

4.2.1 Archival Research

Ku‘iwalu reviewed the recent AIS and AA conducted by CSH and SCS, respectively in regards to their recent archaeological studies and background information. The reports provided valuable information in regards to (1) land commission awards in the vicinity could indicate that subsurface native Hawaiian burials may be present, (2) known native Hawaiian burials within the vicinity, (3) soil condition to determine likelihood of subsurface historic and traditional resources, (4) identification of historic and traditional trails evidencing potential access to gathering of resources, (5) mo‘olelo of events or natural events that could indicate a culturally significant site, and (6) any other relevant information that may be useful in determining the extent that traditional and customary practices may have in the past or continue to exist on the project site.

4.2.2 Pedestrian Site Visit

Immediately after being retained to prepare the CIA, Ms. Chang, an SCS archaeologist, and Kodani & Associates Engineers, LLC conducted a vehicular and pedestrian site visit of the entire proposed project alignment to, (1) determine the scope of the project, (2) identify potentially sensitive areas, (3) identify potential resources that may have been used for gathering, (4) determine the extent of the subsurface excavation, (5) take photos of the historic ditches and culverts, (6) visually locate any potential trails and paths that may be used for access, and (7) identify any potential community concerns.

4.2.3 Grove Farm hosted small talk story with “old timers” from the former Līhu‘e Plantation, Grove Farm, and Kapaia residents

Pursuant to Ms. Chang’s request, Grove Farm assisted in coordinating a small talk story with former “old timers” from the Līhu‘e Plantation and Grove Farm days, as well as those who lived in the Kapaia area. While Grove Farm coordinated the meeting, they did not participate, in order to ensure open and candid discussion. On September 14, 2017, Ms. Chang met with Allan A. Smith, current Kaua‘i Island Utility Cooperative (KIUC)

Director and former CEO of Grove Farm, Max Manera, former Līhu‘e Plantation worker, Les Milnes, Rancher and member of the East Kaua‘i Water User’s Cooperative, Alvin Tanigawa, former Līhu‘e Plantation worker, Wayne Ihara, lived in Kapaia during the plantation days, and Jan TenBruggencate, KIUC Director and author of several books on Līhu‘e Plantation and Grove Farm. These gentlemen shared stories of the days when their families worked on Līhu‘e Plantation, when the Kapaia Cane Haul Road was built during the transition from railroad carts hauling cane to the large trucks moving the cane from the fields, life living on the plantation camps, and the good memories of plantation life. Ms. Chang was extremely grateful to these folks for sharing their stories and to provide them an opportunity to remember the “good ole days.”

4.2.4 Distribution of the CIA letters to those who may have lineal or cultural connection to the project site or ahupua‘a and to the traditional NHO (i.e., OHA, Aha Moku, etc.) who may have relevant information

There were over 25 CIA letters that were sent to individuals or groups that may have relevant information about traditional and customary practices that either may have once existed or continue to exist within the Hanamā‘ulu Ahupua‘a and more specifically within the project area of Kapaia. Of the 25 letters, we received some form of response, i.e., request for meeting, email response, telephone call, or no further comments from 19 of the recipients. We specifically received responses from Uncle Val Ako requesting a meeting, Melanie and Milton Ching requesting a meeting, Chucky Boy Chock who had no comments so long as the County was not diverting the water, “‘a‘ole pilikia,” Nancy McMahon emailed information about Kapaia, Jan TenBruggencate was comfortable with the previous talk story and had no additional comments, and David Pratt sent a letter about the Kapaia Cane Haul Road. Exhibit D is a copy of their responses.

4.2.5 Small talk story sessions with those who requested follow up meetings or those who had relevant information

In addition to those who requested follow up meetings to discuss the CIA, Ms. Chang coordinated a small talk story session with Milton and Melanie Ching whose ‘ohana is from Kapaia, Kaliko Santos (with OHA and is the Aha Moku representative for the Puna District) whose ‘ohana worked on Līhu‘e Plantation as well as she grew up with plantation memories, and Auntie Barbara Say, former member of the KNIBC and long-time resident of Hanalei but remembers the days of the Līhu‘e Plantation. Ms. Chang also had separate talk story sessions with Pat Griffin and Uncle Val Ako.

4.3 Factual Findings Related to Traditional and Customary Practices

4.3.1 Traditional Use and Mo‘olelo

It is significant that the mo‘olelo of the place indicate that Chief Kawelo was born and died in Hanamā‘ulu. Based upon the Mahele records, archaeological research, and ethno-historical accounts, the population of Hanamā‘ulu was concentrated in the lower stream valley and near the shore. The kula lands were used for *wauke*, *‘uala*, and other dry land

crops. However, there are no other documented recordings or oral history of the area as being well habituated or used for gathering purposes. The small talk stories confirmed the historic records that makai of Hanamā‘ulu was a more habituated community with lo‘i kalo cultivation and a vibrant community life. But they recall that there was little information about cultivation other than sugar. Victoria Kamāmalu was awarded the entire ahupua‘a of Hanamā‘ulu as part of a konohiki award LCA 7713, Apana 2 and there are no kuleana awards in the project area. There was no documentation of historic trails or gathering of certain plants for lā‘au lapa‘au.

4.3.2 Potential Native Hawaiian Burials

There has been no documentation of native Hawaiian or any other subsurface burials being discovered within the vicinity of the project area. There are numerous cemeteries within the Hanamā‘ulu Ahupua‘a but none within the project area.

4.3.3 Līhu‘e Plantation

The archival research confirmed that the area was mainly in sugarcane cultivation since 1849 and there was no documented historic or traditional use prior to sugarcane. It was speculated that the continuous use of the area for sugarcane cultivation may have resulted in little access to native Hawaiian gatherers except for hunting with permission by the plantation. Unlike many other historic roads (old government road) that may have been traditional trails, in this case, the documentation confirms that the Kapaia Cane Haul Road was built by the Līhu‘e Plantation in some instances over railroad tracks.

Melanie Ching, who is part Hawaiian, shared that her father was adopted by Peter and Emma Christian in 1939. Her hanai grandfather, Peter Claus Christian, was born in Hanamā‘ulu in 1900, and was employed with the Līhu‘e Plantation until his death in 1959. Her great grandfather was the first Manager for Hanamā‘ulu Sugar Mill and they lived in a house on the top of Kapaia hill with their 12 children. The house still stands today. She is not aware of any ancient trails within the property or any traditional and customary practices in the project area. Exhibit E is a copy of Melanie Ching’s oral history and photos of her family.

Milton Ching, also of Hawaiian and Chinese ancestry, was born in Līhu‘e. His father and their siblings were born in Hanamā‘ulu from the year 1912 – 1921. His grandmother’s father was Sam Paku who lived in Hanamā‘ulu, worked in Ahukini docks, was a fisherman, and worked for Līhu‘e Plantation until he died in 1952. His great grandfather’s wife was born in Kapaia Valley on kuleana land in 1874, some distance from the project area. His Chinese grandfather resided in the “Chinese camp” in Kapaia valley amongst other Chinese workers. Milton shared a publication about Nāwiliwili which described the halo (kalo) field prior to the plantation but he is not sure if it went mauka to Kapaia. He is aware of some hunting up mauka but it was usually with permission and access through the plantation. Milton is not aware of any trails or traditional gathering within the property. Exhibit F is a copy of Milton Ching’s oral history and photo of his family.

Kaliko Santos is the Aha Moku representative for the Puna District which includes Hanamā‘ulu Ahupua‘a and Kapaia and she is also the OHA Kaua‘i senior staff. But more relevantly, Kaliko’s father worked for Līhu‘e Plantation driving workers to and from the job site and remembers how close the plantation families were. She also remembers her mother would tell them that when you see a coconut tree in the middle of a cane field or an empty field that usually means a Hawaiian used to live there. Milton and Barbara remembered similar stories that when you see unusual vegetation, i.e. lonely mango tree, coconut tree, or something “out of place” it usually means someone lived there a long time ago. Kaliko talked to her ‘ohana and they are not aware of any cultural resource or traditional practice that was historically or currently being exercised within the project area. But she would like any construction related activity near the stream to be monitored in the event there is evidence of traditional loi or other cultural or historic resources.

Uncle Val Ako is originally from Hawai‘i Island but moved to Kaua‘i when he got married. Uncle Val is a cultural practitioner who is known for his kūlolo, pa‘akai, inamona, fishing practices, as well as iwi kūpuna. While he is not familiar with Kapaia, he takes seriously mālama nā iwi kūpuna, the care and protection of our ancestors. It is his mana‘o that if any iwi kūpuna are discovered during this project, that the iwi kūpuna be kept within the ahupua‘a as close to where they were found.

David Pratt, former President and CEO of Grove Farm and a former member of the Kaua‘i Ni‘ihau Island Burial Council, confirmed that the cane haul road was part of the Lihue Plantation. Lihue Plantation began phasing out hauling of cane from trains in the 1950s and the last load of train hauled cane was in September 1959. He also noted that cane haul roads were mostly built along former railroad routes. Mr. Pratt is not aware of any burials, trails or cultural significance within the Kapaia Cane Haul Road. Exhibit D is a copy of Mr. Pratt’s response letter to the CIA.

4.3.4 Kapaia Cane Haul Road

While there may not be a lot of documentation or evidence of traditional cultural resources in Kapaia, what is significant about the area is the cane haul road. There were many who talked about how the transition from railroad transporting cane to trucks hauling the cane through the “cane haul road” changed the plantation life. During the talk story with the former Līhu‘e Plantation workers, they unanimously agreed that when the railroads were hauling cane, the plantation workers lived in camps and remained isolated as they did not leave the camps. In fact, the ditch workers, irrigators, truck repairman, and sugarcane workers all lived in the various ethnic camps because that’s where they lived and worked, in addition, most did not own a car. Sometimes the camp consisted of one person or family, i.e. Onuma’s Place, one house camp. See Table 2 which lists the various camps.

Alvin Tanigawa (one of the “old timers”) shared that his father used to own the grocery store in Hanamā‘ulu and he would help his father deliver the groceries to all the different

camps (these were things that they didn't grow in the camps). Alvin remembered his father would make weekly trips to the different plantation camps because no one had cars or horses. The different camps would not only house the sugarcane fieldworkers based on ethnic groups, but the irrigators, fertilizers, etc. would also live in camps near where they worked. His father stopped delivering around 1960 when the railroad cars were replaced with the big trucks hauling cane on the cane haul roads. David Pratt and Allan Smith both recalled that the cane haul road was built by Līhu'e Plantation for the trucks as they closed down the railroad cars. The old timers remember the cane haul road was like a super highway where the truck drivers used it like a race way. They all recall that once the trucks came in, the camps were dispersed and Līhu'e Plantation offered homes to its workers in subdivisions that they built. Max Manera lived in the camp as a young boy and remembers when his family relocated to the new subdivision in 1964-65 after they built the cane haul road. Allan Smith remembered that the plantation built the first subdivision and it was called Isenberg and they sold the homes for \$22,000. People bought cars and were more mobile, they had access to more goods and services, including schools and greater economic opportunities. But none of the old timers remembered any trails, cultural resources, or finding human burials in the project area.

In addition to the oral testimony, the photographs also confirmed that the Kapaia Cane Haul Road was built around 1960. At this date, only 'Ehiku Street had been constructed, there was no Kapaia Cane Haul Road. 'Ehiku Street functioned not only as a street but also provided railway access to LP cane fields to the west. The railroad is visible on a 1912 USGS map of Kaua'i reprinted in 1937 and shows only the railroad track with an irrigation ditch running parallel with it. See Figure 7. No road is shown and there are no subdivisions. The De Mello reservoir is clearly shown on the map.

During the mid-1950's, Līhu'e Plantation began making plans to convert its cane transportation system from railroad to trucks. This conversion was completed by 1960 aerial photo below clearly shows the Kapaia Cane Haul Road as an arc from its intersection with Mā'alo Road, across the stream bed of Hanamā'ulu Stream and along the northwest side of De Mello reservoir till it connects with 'Ehiku Street. It then veers off of 'Ehiku Street and heads toward Nāwiliwili Stream and Līhu'e Mill. At this time, the two subdivisions boarding 'Ehiku Street are pretty well built out. Houses, churches, a hospital and businesses now occupy former cane land. See Figure 8.

SECTION 5 KA PA'AKAI ANALYSIS

5.1 The identity and scope of valued cultural, historical, or natural resources that are found within the proposed project area, including the extent to which traditional and customary Native Hawaiian rights are exercised.

Upon a thorough review of the archival research, previous archaeological studies, site inspection, and numerous written and oral cultural consultations, we were unable to document any cultural or natural resources within the proposed project area. The large amount of kula lands and the intense use of the land for sugar cultivation in Hanamā'ulu may explain the absence of traditional Hawaiian resources. The pattern of plantation land

use, i.e., generally plowing and tilling the soil to at least 36-42 inches, rock removal, etc. destroyed any evidence of pre-contact land use.

The archaeological consultant surmised that based upon historic documentation and mo‘olelo, that during traditional times, the mauka trails to Wailuā which is rich in cultural resources and sites, may have bypassed this area because of the stench from the heiau, Ka-lau-o-ka-manu which may have been used for human sacrifice. Or, perhaps because Kapaia is much further mauka from the low fertile makai lands. He also noted that mā‘alo means to bypass, so perhaps people used Mā‘alo Road to bypass this area. However, it is more likely that with over 150 years of continuous sugarcane cultivation, which may have impacted access by native Hawaiians, that there is at this time, no documentation or evidence of valued cultural and natural resources in the area. Further, the cultural consultations also consistently affirmed that there are no trails, paths, gathering of resources, or burials within the project area.

However, the Kapaia Cane Haul Road is a historically significant resource. The cane haul road changed the traditional plantation community from isolated ethnic camps to a modern integrated community. In 1960, Līhu‘e Plantation transitioned hauling cane from railroad cars to big trucks on the cane haul road. With the use of the Kapaia Cane Haul Road, the plantation workers from the ditch workers, irrigators, to the sugarcane workers left the plantation camps to purchase homes and cars in the towns which provided them access to educational, economic, recreational, and political opportunities that were not available within the plantation camps.

In addition to the Kapaia Cane Haul Road, there are several historic operating plantation ditches and culverts that are still in existence and being maintained and used by Grove Farm and their leased tenants for agricultural purposes. These features are over fifty years old and are examples of the historic plantation era.

5.2 The extent to which those resources – including traditional and customary Native Hawaiian rights – will be affected or impaired by the proposed action.

In this case, while we could not identify any valued cultural or natural resources within the proposed area, we are of the view that the Kapaia Cane Haul Road and the plantation era irrigation features are significant historic resources. The proposed project does not intend to adversely impact or alter the Kapaia Cane Haul Road as it is a functioning access road for Grove Farm, its sublessees, and agencies who use the road for access. In addition, the proposed project will not adversely impact the architectural integrity of the historic irrigation features because rather than excavate under them (and potentially jeopardize the functional use of the resource), the proposed construction will be to adjust the vertical profile of the proposed project to provide vertical clearance above the historic irrigation features within the shoulder of the Kapaia Cane Haul Road.

5.3 The feasible action, if any, to be taken by the agency to reasonably protect Native Hawaiian rights if they are found to exist.

While the CIA has not identified any traditional and customary Native Hawaiian rights or practices that would be impaired by the proposed action, we recommend the following mitigation measures should be adopted to avoid potential impacts to historic resources within the proposed project area:

1. In light of the recent AIS for the Solar City and AA for the Adult Drug Treatment Facility that found no evidence of traditional subsurface resources, we would recommend no subsurface testing (i.e. AIS) be required for this project nor the requirement of archaeological monitoring along the portion of the project alignment that stretches from the intersection of Mā‘alo Road and the Kapaia Cane Haul Road to the edge of Hanamā‘ulu Stream Valley;
2. However, we would recommend full-time archaeological monitoring of the trenching along the section of the project that begins on the north side of Hanamā‘ulu Stream Valley, continuing across the valley and along the old railroad right of way down to ‘Ehiku Street to Kūhiō Highway, in the event historic artifacts are discovered during trenching. The Aha Moku representative also recommended archaeological monitoring in these areas. The full-time monitoring could be reduced to spot checking in consultation with SHPD if the findings are uneventful and consistent with the soils of the Kapaia Cane Haul Road. If required by SHPD, an AMP will be approved by SHPD before construction begins;
3. The archaeological monitor shall document the architecture of the plantation irrigation features, including the ditches, bridges, culvert, and couple of pani wai or sluice gates. The archaeological monitor will coordinate with Grove Farm for any architectural drawings of the features as well as include current photos; and
4. In the event iwi kūpuna are discovered during the project construction, all work in the immediate vicinity shall cease and the Construction contractor will be required to promptly notify SHPD and the KNIBC Chairperson on the disposition of any iwi kūpuna, taking into consideration Uncle Val Ako’s mana‘o of keeping the iwi kūpuna within the Hanamā‘ulu Ahupua‘a or as close to where they were discovered.

SECTION 6 CONCLUSION

Based upon all the above referenced information and analysis, we are of the view that the County’s proposed project will not adversely impact the protection of traditional and customary native Hawaiian rights and practices nor will it adversely affect any significant historic properties.

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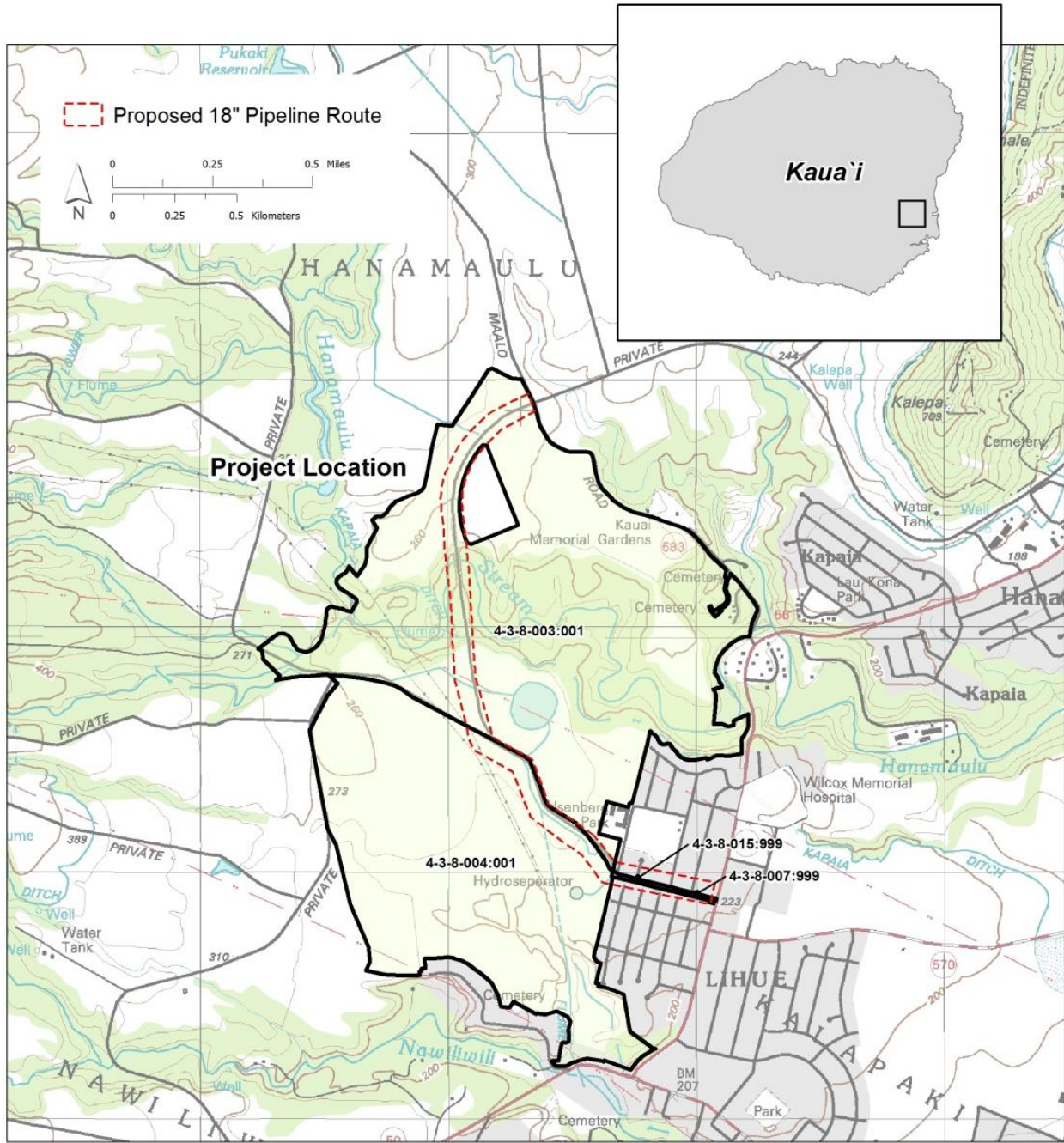
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Exhibit A Proposed Project Location



USGS Quadrangle Map (Base Map)

Exhibit B
Current Existing Conditions

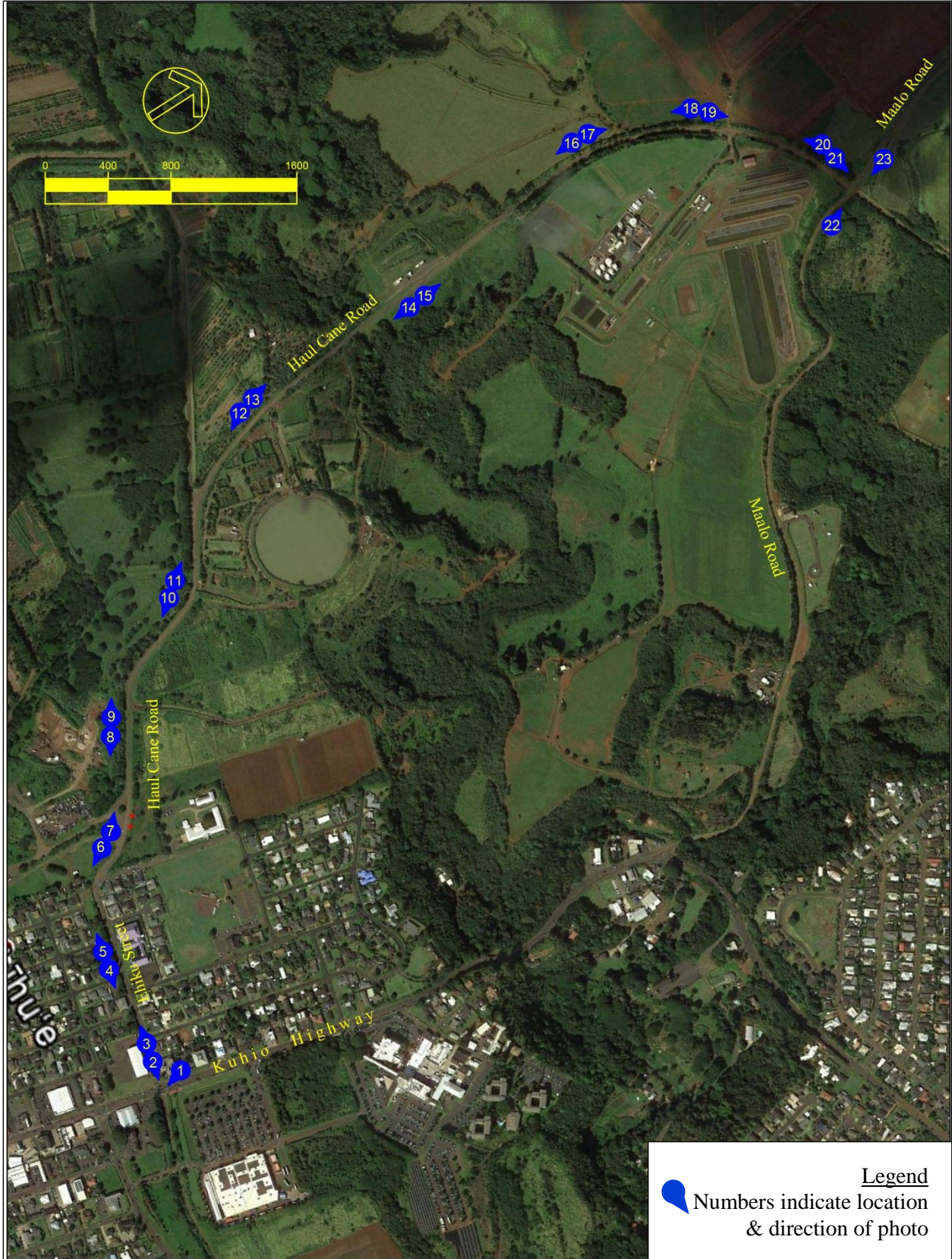


Exhibit B
Current Existing Conditions



Photo #1, Kuhio Highway and Ehiku Street Intersection, Proposed 18” Main to Connect to an Existing 16” Main

Legend



-  = Approximate location of proposed 18” main. Waterline to be buried underground unless otherwise noted.
-  = Approximate location of existing 16” main.

Exhibit B
Current Existing Conditions



Photo #2, Ehiku Street facing towards Kuhio Highway

Exhibit B
Current Existing Conditions



Photo #3, Ehiku Street nearby Kuhio Highway facing towards Haul Cane Road

Exhibit B
Current Existing Conditions



Photo #4, Ehiku Street facing towards Kuhio Highway

Exhibit B
Current Existing Conditions



Photo #5, Ehiku Street facing towards Haul Cane Road

Exhibit B
Current Existing Conditions



Photo #6, The beginning of Haul Cane Road facing Ehiku Street

Exhibit B
Current Existing Conditions



Photo #7, Beginning of Haul Cane Road facing the direction of Maalo Road

Exhibit B
Current Existing Conditions



Photo #8, Haul Cane Road facing the direction of Ehiku Street

Exhibit B
Current Existing Conditions



Photo #9, Haul Cane Road facing the direction of Maalo Road

Exhibit B
Current Existing Conditions



Photo #10, Haul Cane Road facing the direction of Ehiku Street

Exhibit B
Current Existing Conditions



Photo #11, Haul Cane Road facing the direction of Maalo Road

Exhibit B
Current Existing Conditions



Photo #12, Haul Cane Road facing the direction of Ehiku Street

Exhibit B
Current Existing Conditions



Photo #13, Haul Cane Road facing the direction of Maalo Road, Culvert Crossing

Exhibit B
Current Existing Conditions



Photo #14, Haul Cane Road facing the direction of Ehiku Street

Exhibit B
Current Existing Conditions



Photo #15, Haul Cane Road facing the direction of Maalo Road

Exhibit B
Current Existing Conditions



Photo #16, Haul Cane Road facing the direction of Ehiku Street

Exhibit B
Current Existing Conditions



Photo #17, Haul Cane Road facing the direction of Maalo Road

Exhibit B
Current Existing Conditions



Photo #18, Haul Cane Road facing the direction of Ehiku Street

Exhibit B
Current Existing Conditions



Photo #19, Haul Cane Road facing towards Maalo Road

Exhibit B
Current Existing Conditions



Photo #20, Haul Cane Road facing towards Ehiku Street

Exhibit B
Current Existing Conditions



Photo #21, End of Haul Cane Road facing intersection with Maalo Road

Exhibit B
Current Existing Conditions



Photo #22, Maalo Road facing mauka towards intersection with Haul Cane Road

Exhibit B
Current Existing Conditions



Photo #23, Maalo Road facing makai towards intersection with Haul Cane Road

Exhibit C Names and Organizations Contacted

Name	Affiliation/Organization	Method of Contact	Follow up (Y/N)	Responded (Y/N)
Dan Ahuna	Office of Hawaiian Affairs	12/28/17 mailed CIA letter		
William J. Aila, Jr.	Department of Hawaiian Home Lands	12/28/17 mailed CIA letter	Y	
Uncle Val Ako	Kupuna, Cultural Practitioner	12/28/17 mailed CIA letter 1/10/18 meeting	Y	Y
The Honorable Bernard P. Carvalho, Jr.	Mayor, County of Kaua'i	12/28/17 mailed CIA letter		
Melanie Ching	'Ohana with lineal connection to Kapaia	1/10/18 meeting	Y	Y
Milton Ching	'Ohana with lineal connection to Kapaia	1/10/18 meeting	Y	Y
Chucky Boy Chock	Kaua'i Museum	12/28/17 mailed CIA letter		Y
Dr. Kamana'opono Crabbe	Office of Hawaiian Affairs	12/28/17 mailed CIA letter		
Leimana DaMate	DLNR - Aha Moku Advisory Committee	12/28/17 mailed CIA letter	Y	Y
Kanani Durant	'Ohana with lineal connection to Kapaia	12/28/17 emailed CIA ltr		
Pat Griffin	Lihu'e Historian, Chair of the Lihu'e Business Association	12/28/17 emailed CIA ltr 1/10/18 meeting	Y	Y
Kauano'e Hoomanawanui	State Historic Preservation Division	12/28/17 emailed CIA ltr		
Paul Horner	Grove Farm Museum	12/28/17 mailed CIA letter		
Mark Hubbard	Mālama Huleia, formerly with Lihu'e Plantation	12/28/17 mailed CIA letter	Y	
Wayne Ihara	Formerly with Lihu'e Plantation	9/14/17 group meeting	Y	
Kauilani Kahalekai	Kaua'i Historical Society	12/28/17 mailed CIA letter		
Sabra Kauka	Cultural Practitioner, Educator	12/28/17 emailed CIA ltr	Y	
Max Manera	Formerly with Lihu'e Plantation	9/14/17 group meeting	Y	
Nancy McMahan	Archaeologist on Kaua'i	12/28/17 emailed CIA ltr	Y	Y
Les Milnes	Former Rancher	9/14/17 group meeting	Y	
David Pratt	Former Grove Farm President & CEO	12/28/17 emailed CIA ltr	Y	Y
	Queen Deborah Kapule Hawaiian Civic Club	12/28/17 mailed CIA letter		
Lenny Rapozo	Department of Parks & Recreation	12/28/17 mailed CIA letter		
Donna Kaliko Santos	Office of Hawaiian Affairs, Kaua'i Branch Aha Moku Advisory Committee, Puhi Camp 'Ohana	12/28/17 mailed CIA letter	Y	Y
Barbara Say	Cultural Practitioner; former Kaua'i Ni'ihau Island Burial Council member	1/10/18 meeting	Y	Y
Allan Smith	Kaua'i Island Utility Co-Op (KIUC); former Executive of Grove Farm and Lihu'e Plantation	9/14/17 group meeting 12/28/17 mailed CIA letter	Y	
Ka'ahiki Solis	SHPD - Cultural Historian	12/28/17 emailed CIA ltr		
Lyle Tabata	Formerly with Lihu'e Plantation, Acting County Engineer	12/28/17 emailed CIA ltr	Y	
Alvin Tanigawa	Father owned grocery store and delivered to Lihu'e Plantation workers	9/14/17 group meeting	Y	
Jan TenBruggencate	KIUC, Author of several books on Lihu'e Plantation and Grove Farm	9/14/17 group meeting 12/28/17 mailed CIA letter	Y	Y
Randy Wichman	Cultural Practitioner, Na Kahu Nikina'akala	12/28/17 mailed CIA letter		
Keith Yap	Kaua'i Ni'ihau Island Burial Council	12/28/17 emailed CIA ltr		

Exhibit D
Response Letters

rec'd 1/10/18

[REDACTED]
[REDACTED]
[REDACTED]
January 6, 2018

Dawn N. S. Chang
Principal, Ku'iwalu
Pauahi Tower, Suite 750
1003 Bishop Street
Honolulu, Hawaii 96813

Re: Kapaia Cane Haul Road 18-inch Main

This letter is in response to your email dated December 28, 2017 seeking input for this Cultural Impact Assessment.

The subject Cane Haul Road was part of The Lihue Plantation Co. Ltd. which was started by Henry A. Peirce & Co. in 1849. The road area is part of a 18,000 acre parcel purchased by Grove Farm Co. Inc. in July 2001. Grove Farm was purchased by Steve Case in 2000.

The Lihue Plantation co. began fazing out of hauling cane with trains in the 1950s. The last load of train hauled cane was in September 1959. Haul cane roads were mostly built along former railroad routes.

I was employed as a field supervisor at Lihue Plantation from June 1963 to January 1966. I was President & CEO of Grove Farm from April 1975 to March 1996 and from January 2001 to February 2005. I was also a member of the Kauai and Niihau Island Burial Council from March 1989 to November 1992 and from July 1994 to June 1999.

I am not aware of any burials, trails or cultural significance within the Kapaia Cane Haul Road area.

Very truly,

David W. Pratt

David W. Pratt

Exhibit D Response Letters

From: Nancy McMahon [REDACTED]
Sent: Wednesday, January 03, 2018 12:43 PM
To: Shirlyn Hookano
Cc: Dawn Chang
Subject: RE: Kapaia Cane Haul Road 18-in Main Cultural Impact Assessment

Happy New Year Shirlyn and Dawn

Based on my knowledge of this area, it was mainly in sugarcane cultivation. The soils are variable 20 to 60 inches deep. Puhi series soils. The land type is used for sugarcane, pineapple, truck crops, pasture, wildlife habitat, watershed. It's on the Alexander map of 1878 as Hanamaulu Plantation and merged with Lihue Plantation in 1898. No LCAs in the vicinity and no documented historic use prior to sugarcane. You will probably find culverts, ditches, slice gates, railroad remnants and plantation roadways still there today. Victoria Kamamalu was awarded the ahupua'a as part of a konohiki award LCA 7713, 'Apana 2. Looking at Hanamaulu in pre-Western Contact. Handy 1940 is a good source for that information. Legends, it was the birth and death place of Kawelo. So it clearly was an important ahupua'a. Kalepa ridge was also very important, with sandalwood, a sandalwood pit, burials, heiau on that ridge.

General, I do not think there is much traditional cultural activity for these parcels for the 16 inch water main. My guess is that is because the Plantation had the lands, little access was granted to Native Hawaiians. There are several cemeteries around the area. The oldest in the area is the Kapaia Chinese Cemetery. Then there is the Immaculate Conception Church cemetery, and Kauai Memorial Gardens.

Kupuna: Eddie Sarita, Mgr for the Convention Center, knows a lot about Hanamaulu. Les Milnes Plantation area; Butch Durant Konohiki? , Durgh Kane

Kapaia Cane Haul Road based on maps of Monsarrat 1900 and Alexander 1878, built between 1878 and 1900.

No concerns over the project.

+++++
Nancy McMahon



Exhibit D Response Letters

From: Kaliko [REDACTED]
Sent: Wednesday, June 07, 2017 12:13 PM
To: William Eddy, PE
Subject: Kapaia Cane Haul Road 18-Inch Main

Aloha Mr. Eddy,

Mahalo for letting the Puna Moku / Aha Moku comment on this project.

In consulting with members of Puna Moku/Aha Moku - Manokalanipo, the general area of this project may have scattered remnants of Lihue Plantation structures alongside the road, including ditches, culverts, sluice gates, bridge and a large water filtration facility.

With the general information provided, pre-contact sites, including iwi kupuna, are not expected. If the present construction has adverse effects to the historic properties, mitigation in the form of documenting the adverse effects to these historic properties would be appreciated.

We also favor an archaeological monitoring plan if, and only if, there is a potential for adverse effects to any historic properties especially since ground disturbance at such a depth to accommodate this large water main.

We would also like to request that we be kept abreast of this project.

Mahalo,

D. Kaliko Santos
Puna Moku
Aha Moku - Manokalanipo



Virus-free. www.avg.com

Exhibit D Response Letters

From: Chucky Boy Chock [REDACTED]
Sent: Tuesday, January 02, 2018 9:24 AM
To: Dawn Chang
Subject: Kmuseum

Aloha e Dawn as long as our precious water source is not being diverted (sounds like you're just tapping into an existing line) a'ole pilikia. Mahalo ia oe chucky boy

Chucky Boy Chock
Executive Director
Kauai Museum
[REDACTED]

Exhibit E
Melanie Ching Oral History and Photos

ORAL HISTORY FOR KAPAIA AND HANAMAULU, KAUAI

Aloha,

My name is Melanie Ching, I am of part Hawaiian ancestry, and was born in 1960. My father at an early age was adopted by Peter and Emma Christian, this was in 1939. My hanai grandfather Peter Claus Christian, was born in Hanamaulu, in 1900, and was employed with the Lihue Plantation Company, at the Hanamaulu Sugar Mill, he was a Supervisor, till his death in 1957.

My aunt, tells me that she was born in the family house, at a place called "Christian crossing" in 1929, this site is just above Wailua falls. During my father's life time, we used to drive out to the housesite, but it was well in ruins.

My hanai great grandfather, Charles Claus Christian, was born in a village called Ulkebol, island of Als, Sonderbeg, Denmark, in 1851, and was of Danish-German ancestry. He arrived on Kauai on the vessel "Morning Star" in 1875. My great grandfather, was the first Manager for Hanamaulu Sugar Mill. My great grandparents Charles and Emma, were the parents of 12 children all born in Hanamaulu. The house still stands today on the top of Kapaia hill. In 1910, both of my great grandparents died within minutes of each other and are buried at the Immaculate Conception Catholic Church, in Kapaia valley.

I have no information of any ancient trails or railroad tracks if any, my ancestors are all gone.

Sincerely,
Melanie Ching
Melanie Ching

[REDACTED]
[REDACTED]

Exhibit E
Melanie Ching Oral History and Photos



Exhibit F
Milton Ching Oral History and Family Photo

ORAL HISTORY FOR KAPAIA AND HANAMAULU, KAUAI

Aloha,

My name is Milton K.C. Ching, I am of of Hawaiian and Chinese ancestry. I was born in Lihue, Kauai in 1957. My father and his siblings were all born in Hanamaulu, from the year 1912 to 1921.

My father's mother and her siblings were also born in Hananaulu from the year 1896 to 1909. My grandmothers father, Sam Paku, held several jobs while living in Hanamaulu, he worked at the Ahukini docks, he was a fisherman and Lihue Plantation Company, till his death in 1952. My great grandfather's wife, was born in Kapaia valley on kuleana land, back in 1874, formerly awarded to Naehu(k) in 1848.

My grandfather, Ching Kai Chong, was born in Kwantung Province, China in 1874. He arrive on Kauai in 1896, as a contract laborer for the Hanamaulu Sugar Mill. My grandfather was a rice planter by trade and was employed by Ah Chock. He resided in a "Chinese Camp" in Kapaia valley amongst other Chinese workers. He died in 1936.

In the later parts of 1970's I visited the various ethnic Plantation Camps, that I visited in Kapaia, and all or most were in ruins, and I saw little or no buildings or remnants left.

I have no information, regarding any historic trails, or places within the Kapaia area. That information has none been lost with the passing of my ancestors.

Sincerely,


Milton K.C. Ching




Exhibit F
Milton Ching Oral History and Family Photo



**ARCHAEOLOGICAL FIELD INSPECTION AND ARCHIVAL
RESEARCH FOR THE KAPAIA CANE HAUL ROAD
18-INCH MAIN PROJECT**

**HANAMA`ULU AND KALAPAKI AHUPUA`A
PUNA DISTRICT
KAUA`I ISLAND
HAWAII**

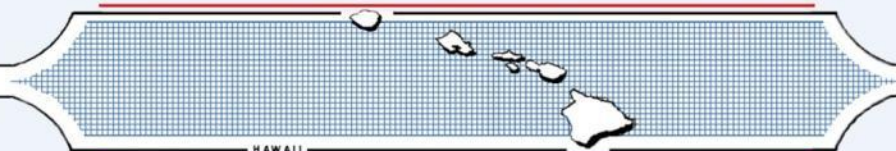
TMK: (4) 3-8-018:001, (4) 3-8-018:002, (4) 3-8-15, (4) 3-8-07 and (4) 3-8-09.

Prepared by
**Jim Powell, B.A.,
Ramona Kindcaid, M.A.,
and
Michael F. Dega, Ph.D.**

January 2018

Prepared for:
County of Kaua`i
Department of Water
4398 Pua Loke Street
Lihue, HI 96766

SCIENTIFIC CONSULTANT SERVICES Inc.



1347 Kapiolani Blvd., Suite 408 Honolulu Hawaii`i 96814

INTRODUCTION

This document provides archaeological and archival information for the Kapaia Cane Haul Road 18-Inch Main that is proposed for the Hanamā`ulu area of eastern Kaua`i in Hanamā`ulu and Kalapakī Ahupua`a, Puna District, Kaua`i Island, Hawai`i (TMK: (4) 3-8-018:001, 3-8-018:002, 3-8-015, 3-8-007 and 3-8-009). The goal of this document is to examine past land use history of the area and assess any known sites and the potential for any archaeological sites in the proposed project area. This document is complimentary to the Cultural Impact Assessment that has been completed for the project.

The proposed project consists of an approximately 9,000 foot long, 18-inch diameter water transmission main along the existing `Ehiku Street and the Kapaia Cane Haul Road, dating to 1959 (see below), from Kuhio Highway to Ma`alo Road. The proposed transmission main will simply connect to existing Kauai Department of Water mains on each end. No historical properties will be adversely affected by this undertaking. The following provides detailed historical background to the project area and environs, as well as the results of previous archaeological work in the area.

Traditional Background

Hanamā`ulu and Kalapakī are adjacent *ahupua`a* within the traditional district (*moku*) of Puna in southeast Kaua`i. Hanamā`ulu is bordered by the ahupua`a of Wailua to the north and Kalapakī and Haiku to the south. The ahupua`a of Kalapakī has Nāwiliwili at its southern border. Both Hanamā`ulu and Kalapakī ahupua`a now reside in the modern judicial district of Līhu`e. Līhu`e which means “cold chill” (Pukui 1974) originally referred to the center of Līhu`e town where the bank and post office reside but it was later (in 1861) used to describe the larger district (Rice 1991:46).

Hanamā`ulu means “landing, land section, village, bay, ditch, river, beach park, and birthplace of the hero Ka-welo, tired (as from walking) bay,” (Pukui et al, 1974:41). According to Wichman (1998:60) it is called “tired bay” since getting there was an effort since it was miles from the regular trail. Hanamā`ulu extends from the ocean east towards Wai`ale`ale with numerous streams flowing from it. Wichman (1998:60) mentions two of these streams; the “Wai-ahi (fiery water) stream flows into Wai-aka (reflecting stream). The stream was considered a kupua (the body of a supernatural being). A village was located on its banks and ‘o`opu (fish) harvested from the stream.” These two streams flow into the Kapaia reservoir that feeds the Hanamā`ulu Stream (or Kapaia Stream) and one of the major geographical features near the project area along with Kilohana Crater and Kalepa ridge. Handy (1972:425) describes the Hanamā`ulu stream as “flowing from the side of Kilohana crater through a broad gulch in which there were many terraced flats, beginning about two and a half miles upstream. The large delta area where the stream flows into the bay undoubtedly was covered with *lo`i* or wet-taro cultivation before this land was taken over for sugar cane. Much of the higher land now planted with cane must formerly have been used for growing sweet potatoes.” Hanamā`ulu was also the source for coconuts planted at sea level, *wauke* (paper mulberry for clothing and bed

clothes) on valley slopes, and *olona* (native shrub used for rope, nets, etc.) at higher elevations (Handy, 1940:50). On Hanamā`ulu's seaward boundary lies Ahukini that is named for a son (Ahukini-a-La`a) of La`-mai-Kahiki who came from Tahiti. More literally Ahukini means "altar for any blessings" (Pukui et al 1974). Ahukini Heiau is located on the bluff overlooking the bay; it is a medium sized temple with only the foundations remaining (Thrum 1906).

In one account of the legend of Kawelo, he is said to be born in Hanamā`ulu (Fornander 1918-1919 Vol. 2:2). After many battles with Aikanaka (his cousin), whom he eventually vanquishes, he retires to his parents' old house in Hanamā`ulu (Fornander 1918-1919 Vol. 2:70-71). Hanamā`ulu is also mentioned in the story of Pele, where, in a jealous rage she covers Lohiau (her lover) with lava. Two of Pele's brothers bring him back to life and one brother transforms himself into a canoe and they sail to Kaua`i landing at Ahukini. Lohiau then goes to Hanamā`ulu where he found all of the houses closed save one where two men were making tapa. They all walk to Kapaa where Lohiau is eventually reunited with Hiiaka, Pele's sister (Rice 1923:7-17).

To the east of the project area is Kalepa ridge and its highest peak, Kalepa, which means "trader, merchant salesman, peddle and to trade, sell as merchandise, peddle or to flutter or wave" (Pukui et al 1986:122). It literally means to "strike flag" which a salesman would do to signal items for barter. A *heiau*, Ka-lau-o-ka-manu (tip of the end piece of the canoe) was located at the base of Kalepa at the south end and thus its name. It was said to be used for human sacrifices and feared by travelers who hurried past it because of the bad smell (Wichman, 1998:61). Thrum (1906: 40) described the *heiau* as "a large walled heiau that stood above the present mill; destroyed about 1855. Of pookanaka class." There are two stones beside the heiau and the story is that Chief `U`u-kani-pō was betrothed to Ka-lau-o-kamani, a chiefess of Hanamā`ulu. `U`u-kani-pō went to see Ka-lau-o-kamani with his friend Ka-ipo-lei-manu. They were walking down a path toward Kalepa from Kilohana Crater when they encountered a woman who told them to turn back. She told them not to go near Ka-lau-o-kamani but to go back toward the mountains to seek her sister, Moeapaki`i and marry her. `U`u-kani-pō recognized her as Ka-lau-o-kamani's ghost and was determined to find out what happened to her. They hurried toward village but the stench was so strong they were overcome and turned into rocks. These rocks guard the path as a warning to travelers (Wichman 1998:62).

Kilohana crater is a small collapsed shield volcano that straddles the ahupua`a of Hanamā`ulu and Haiku to the west. The name Kilohana means "vantage point" (Wichman 1998:60). In the Legend of Kamapuaa, the warrior and a friend Limaloa journey from Kipu looking for the two daughters of Kaneiki. They come upon them at Kilohana in a valley overgrown with kukui trees where they were gathering kukui nuts (Fornander 1918:314). Kamapuaa later defends Kaneiki in a battle with Makalii and his warriors. Kukui is also mentioned in the story of Kila, son of Mo`ikeha, who goes to Ra`iātea to bring back his father's foster son, La`a-mai-Kahiki. At each stop in Ra`iātea he encounters several questions, one is what is he (Moikeha) doing and where the kukui blossoms of Puna change; where the waters of Wailua stretch out..." (Wichman 2003: 31). Kilohana was also known for a particular kind of maile, maile ku (Fornander V5, 1918: 616).

Kalapakī means “double-yoked egg” (Pukui et al 1986:122) but the story connecting the egg and Kalapakī has been lost. Nāwiliwili stream flows through Kalapakī, it is so known because it defines a twisted path through the two *ahupua`a* that it separates. The Nāwiliwili delta and surrounding area that included offshore fishing, freshwater ponds, wet taro and sweet potato supported one of the 5 areas of population concentration on Kaua`i (Handy 1972:269). “For 3 miles inland from the sea the Nāwiliwili River twists (*wiliwili*) through a flat valley bottom which was formerly all in terraces. Inland, just above the bay, three Hawaiian taro planters cultivate wet taro in a few small terraces. Most of the land is in pasture. There are one small cotton plantation and several small garden plots. For about a half mile below and a half mile above the mill the valley is mostly filled with plantation camp and other structures, with many small clumps of bananas, some garden plots, and a few old breadfruit trees. The old terrace area extended half a mile up into the small valley that opens out northwest just above the mill. Approximately the last mile of flat valley bottom, before the river bed becomes a narrow gulch, used to be in terraces but is now pasture and ranch land,” (Handy 1940:67).

Hanamā`ulu and Kalapakī were clearly inhabited prior to 1778 Hawaii. The *mo`olelo* (“oral traditions”) and *wahi pana* (“storied places”) and early historic eyewitness accounts suggest settlement activities with landscapes containing agricultural remnants, *heiau* implying religious and other cultural practices, and nearby native forest resources.

Historic Period

After Captain Cook’s arrival in 1778, other ships began arriving in Hawaii to take on provisions and to partake in the sandalwood industry. Soon after, missionaries, visitors, and entrepreneurs began arriving. Accounts of the new residents and travelers describe the lands adjacent to Kilohana as grasslands with *kukui* groves and streams flowing through valleys dense with *Koa*, sandalwood, *hao*, and other forest products. Trails typically used to travel from Koloa to Wailua are also noted in these early journals.

Reverend Hiram Brigham (1847:219) describes his route through Hanapepe and Wailua on the way to Hanalei in 1824, “I ascended a steep hill, or high pali, that walls up the Valley on its eastern side, and by a slightly circuitous route, passed over to Wailua, through a country of good land, mostly open, unoccupied and covered with grass, sprinkled with trees, and watered with lively streams that descend from the fest-covered mountains and wind their way along ravines to the sea, - a much finer country than the western part of the island over which I passed to meet the kings. In the interior, I saw a small herd of wild cattle.” According to Damon (1933:401), the route he uses is referred to as the “upland trail back of Kilohana” that was also taken by Mr. Gulick in 1829. Here she provides further clarification, “A century ago there were two trails from Waimea after leaving Koloa, one passing south of Kilohana crater above Nawiliwili bay and thence by Hanamaulu along the coast to Wailua; the other passing to the north of Kilohana crater and reaching Wailua across the uplands. This latter trail, now long since abandoned, was then the more usual one on foot and horseback,” (Damon 1931:360).

An 1878 Hawaiian Government Survey map (Figure 1) shows the existence of a trail from Koloa to the western rim of Kilohana crater that eventually joins with Maalo Road at a point north of the project area. The word *maalo* means “to pass along, by, or alongside, as to overtake and pass a car; to transship; to pass through as land (Pukui 1986).

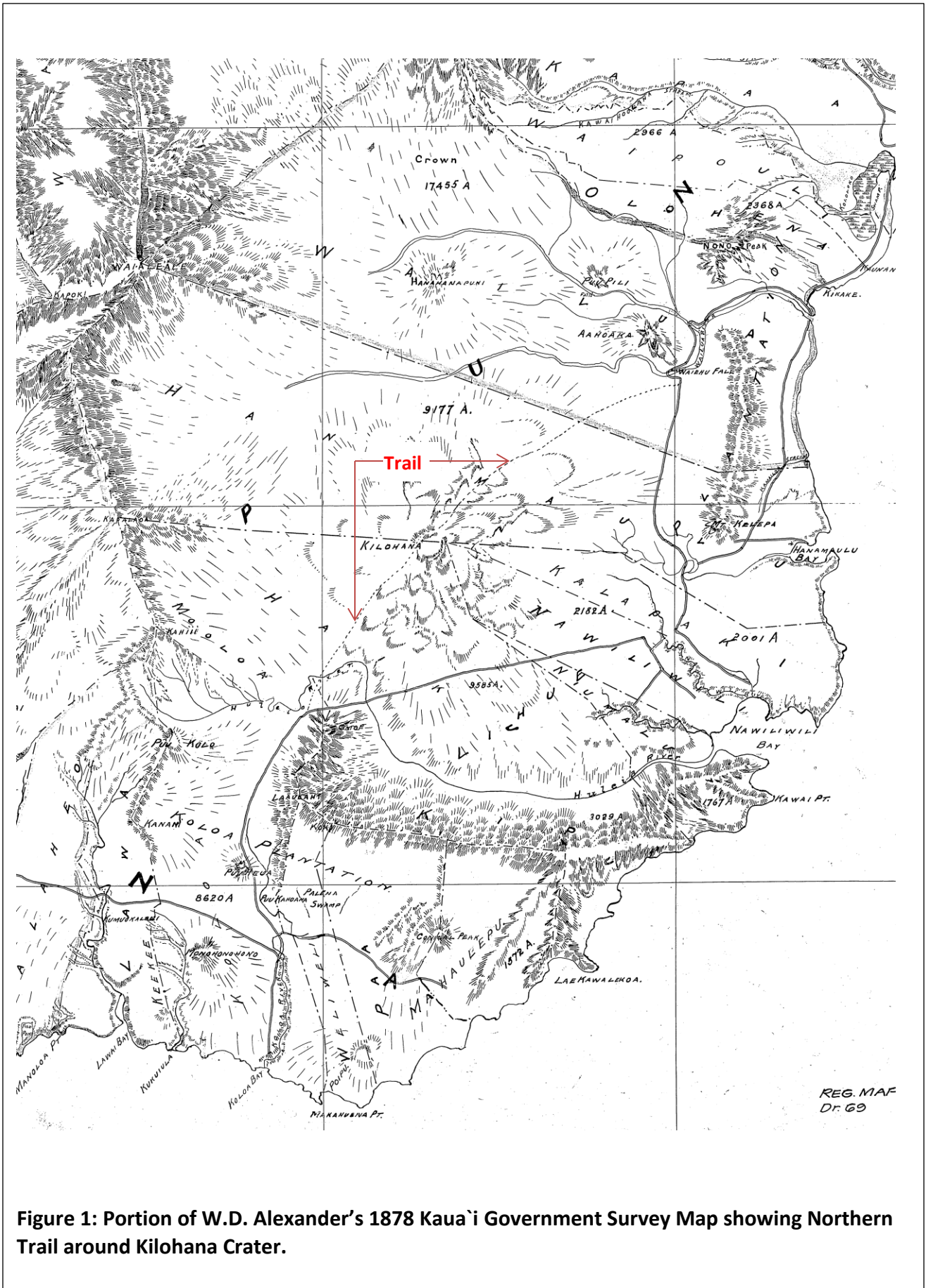


Figure 1: Portion of W.D. Alexander's 1878 Kauai Government Survey Map showing Northern Trail around Kilohana Crater.

Many travelers journeyed to Wailua Falls and documented their observations. In 1838, J. Jarves (1838:9) reported in the *Hawaiian Spectator* about his trip from Koloa where he observed, “a richly diversified valley, bordered by two ranges of mountains, on whose distant sides herds of wild cattle can be seen feeding.-at times it rounds the base of some high hill then plunges into a deep ravine, and ascends on the opposite side, to table land, covered with high prairie grass, which sweeps the stirrups as you ride through it. Shady groves of the *tutui* (*kukui*) tree like scattered over its surface, like islands sleeping upon the bosom of some still lake. In the mountains of the left, distant cascades are seen, resembling silvery ribbons, as they force their way from cliff to cliff, and contrasting beautifully with the dark masses of foliage with which they are surrounded.” A *Paradise of the Pacific* article describes the two roads to Wailua Falls and what the traveler would encounter in 1896, “...5 miles from Līhu`e, over a road winding through populous valleys, between blooming cane fields and past wavy grass-covered hills, where droves of cattle are continually grazing, a loud roaring sound breaks the surrounding stillness...Wailua Falls...leaving the falls, the traveler has the choice of two roads. The inland road, though the most romantic, for it passes through a lovely country, over undulating hills, and into wonderfully fertile valleys, can be made only on horseback, and in the company of a guide. The other road takes the tourist past Hanamā`ulu, a settlement composed chiefly of the laborers employed in the Hanamā`ulu sugar mill, past the mill and on between dense hau trees, until the mouth of the Wailua river is reached.”

Another visitor describes Hanamā`ulu Valley in 1849 as being, “...the picturesque valley of Hanamaulu. This valley is prettily bordered by groves of Kukui, koa, & hala trees, and is well cultivated with Taro. A fine stream flows through the midst of it, which makes a remarkable bend at this place like a horse shoe. We then traveled along the seashore at the foot of a range of hills through groves of hau, & among hills of sand....About eight o'clock we arrived on the banks of the Wailua River” (Kaua`i Historical Society 1991:122).

Mary Rice relates her first encounter with Kalapakī, Nāwiliwili, and Hanamā`ulu when her family arrived, “the mauka lands consisting of the ridges running to the crater of Kilohana, were nearly all densely wooded with the indigeneous *koa*, sandalwood, *hao* and *aakea*. Some of these groves were such dense growth that they were almost impossible to ride through. Upon the lower lands were groves of the beautiful Kukui and Hau. Even the first field upon which cane was planted was left partially standing in trees with the cane growing between and around the trees. This was the field of Halo.....The Hawaiian village of Pualoki , consisting of thatched houses, extended from near the present cemetery.....There were also large settlements of Hawaiians in Halehaka valley, Niumalu, Nawiliwili and Hanamaulu valleys,” (Kaua`i Historical Society 1991:47).

These early eyewitness descriptions support the *mo`olelo* and *wahi pana* accounts of the settlement activities in the valleys of Hanamaulu and Kalapakī and in adjacent upland regions which contained native resources such as *kukui*, *koa*, *hala*, *hau*, sandalwood, and grasses. The accounts also describe trails that facilitated travel across the island in the historical era which is similar to the ways that legendary figures traversed the same landscape.

Land Tenure

Land tenure in pre-contact Hawaii was a hierarchical system where the King owned all of the lands and divided it up among his high chiefs or warriors (*ali'i/konohiki*). The high chiefs subdivided their land into parcels for their lower chiefs and further divisions were made to the tenants who farmed the land or commoners (*maka'āinana*). All of the people who held land paid land taxes and service to the King. In 1846 Kamehameha III and his chiefs began the transformation from the traditional system of land tenure to one where the land was divided among the people with vested rights, namely, the King, the chiefs, and the tenants. The "Board of Commissioners to quiet Land Titles" was appointed to confirm or reject all claims to the land (Alexander W.D. 1882). All of the land divisions were recorded in the Mahele Book (book of divisions) and the process which lasted until 1853 became known as the Great Mahele. Victoria Kamāmalu was awarded a *konohiki* award that included the ahupua`a of Hanamā`ulu and the ahupua`a of Kalapakī and is designated Land Commission Award (LCA) 7713:2. The project area is located entirely within this LCA which was a part of Līhu`e Plantation's acquisitions for sugar in the mid 1800s. The Kuleana Act of 1850 allowed the *maka'āinana* to apply for their land claims. In Hanamā`ulu 18 claims were made and 15 were awarded; in Kalapakī 13 claims were made with 12 granted (Table 1). All of these awards (listed in the following tables compiled from the Papakilo Database) were for lots located close to the streams and coastal areas of both *ahupua`a* and removed from the project area. The awards are clearly shown in Hawaii Territory Survey maps (Figure 2 and Figure 3).

Table 1: Hanamā`ulu Land Commission Awards

Land Claim #	Claimant	Award
3271	Lalahilimoku,	Leimoku 1 Ac 1 rood 21 rods
3371	Naehu	1.25 Ac 19 rods (Kapaia)
3423	Paka	1.50 Acs 33 rods
3426	Pelekane	1 Ac 17 rods
3558	Keke	3 roods 1 rod
3600	Keolanui	1.75 Acs 30 rods
3640	Kumakahaohao	1 Ac 1 rood 12 rods
3644	Kaulupa	1.25 Acs 23 rods
3647	Kapuohi	4 Acs 32 rods (Moala) 38 rods (Papuaa)
3648	Kala	1.25 Acs 30 rods
3649	Kamalo	1.75 Acs 20 rods

3650	Kaluhiwaha	3 roods, 35 rods
3653	Kolu	1 Ac 37 rods
3657	Niho	1 Ac 1 rood 13 rods
5089	Kuhaimoana	3 roods 17 rods
7713	V. Kamamalu	9,177 Acs (Ap2) ahp

Kalapaki Land Commission Awards

Land Claim #	Claimant	Award
238 P	Kinipeki	1 Ac. 32 rods
3249	Hao	3 roods, 11 rods
3280	Wawae	1 Ac. 1 rood 18 rods
3408	Papaa	2.5 Acs 33 rods
3425	Paiki	1 Ac. 1 rood 36 rods
3637	Kauhailawa	2 Acs 1 rood 14 rods
3642	Kuolohu	3 roods
3643	Kukahiko	3 roods 24 rods
3907	Nakala	3 Acs 25 rods
7713:2	V. Kamamalu	2004 Acs

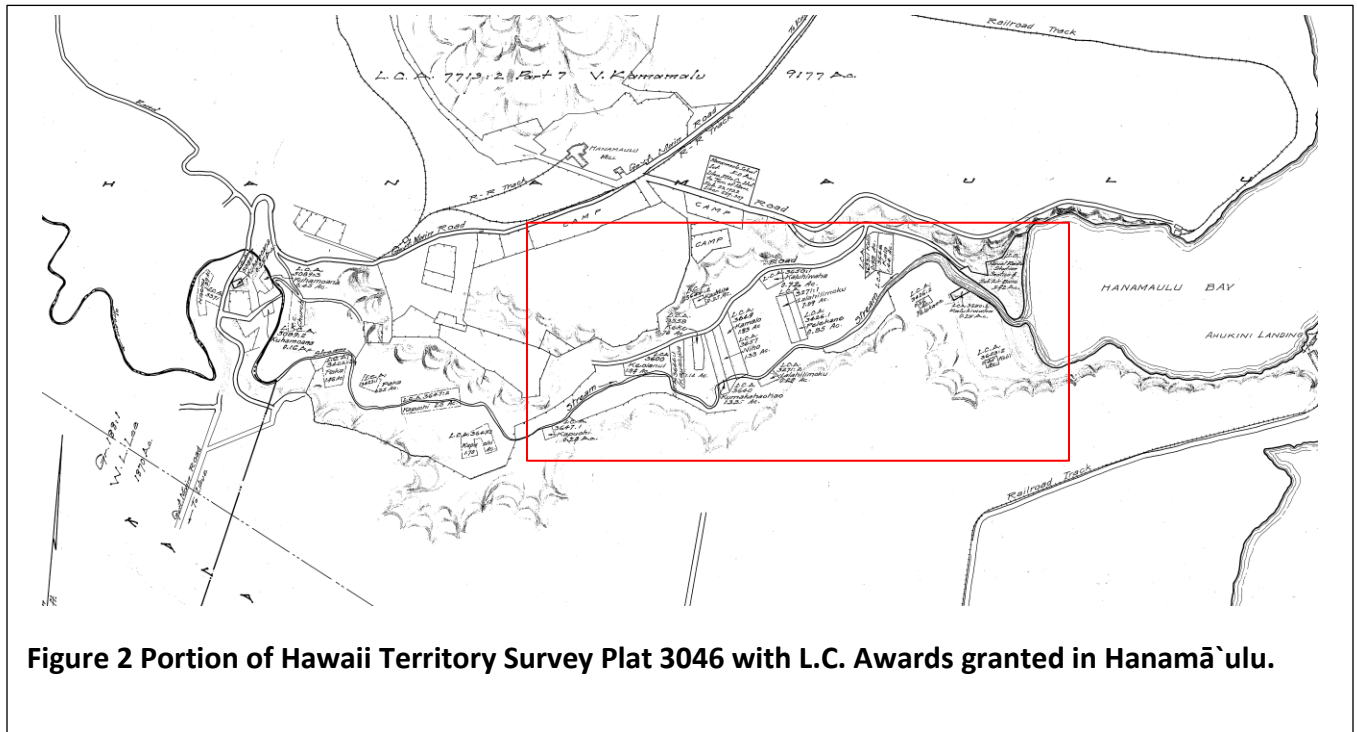


Figure 2 Portion of Hawaii Territory Survey Plat 3046 with L.C. Awards granted in Hanamā'ulu.

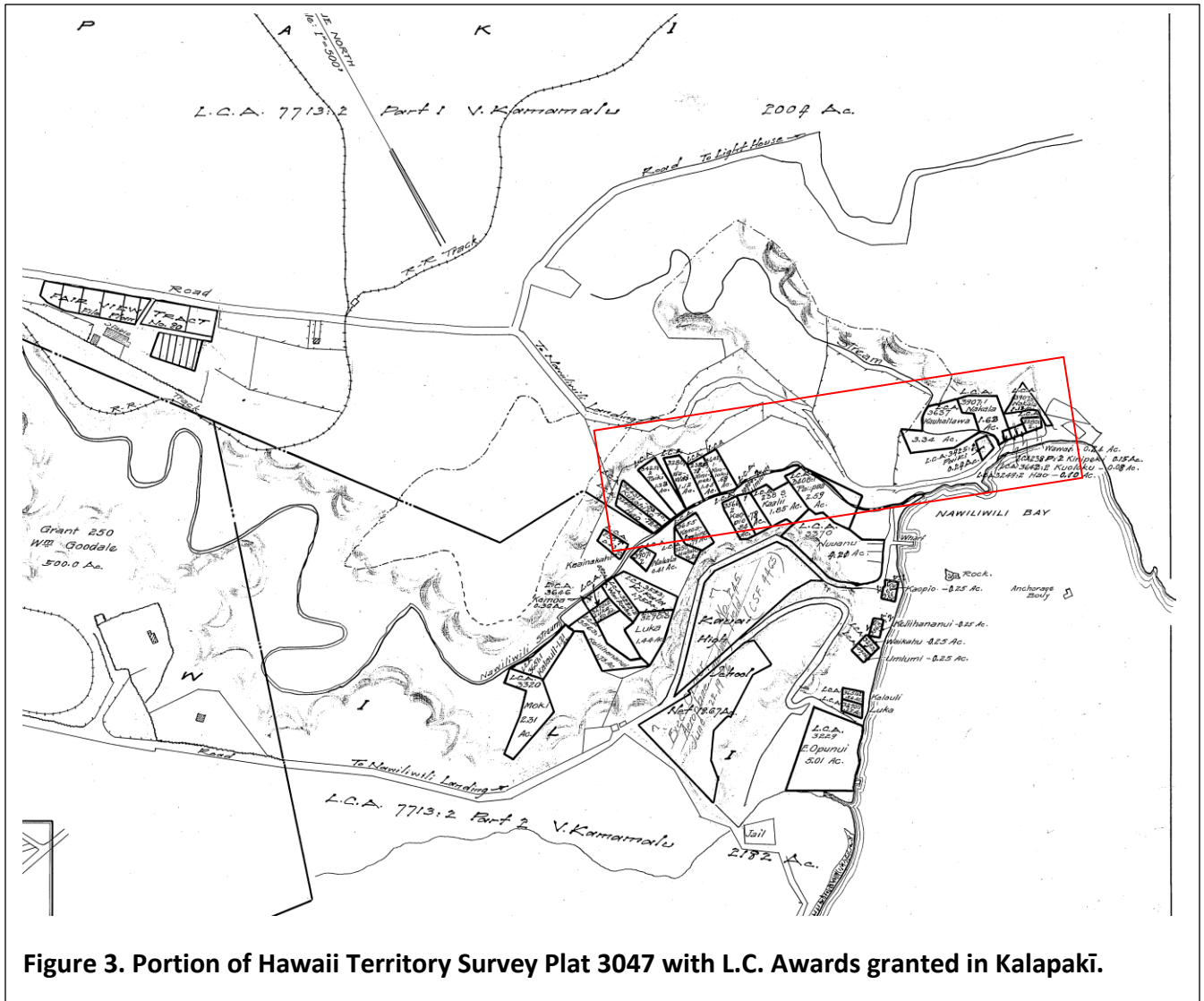


Figure 3. Portion of Hawaii Territory Survey Plat 3047 with L.C. Awards granted in Kalapakī.

Līhu`e Plantation

In 1849 a partnership was formed by Charles Reed Bishop, Judge William L. Lee, and Henry A. Peirce. It was known as the Henry A. Peirce Company with H. Hackfield serving as agents. By 1857 the Nāwiliwili mill was in use and the Līhu`e Ditch, the first irrigation ditch in Hawaii, was built by William Harrison Rice who later became the plantation manager. Paul Isenberg became the manager in 1858 and remained at the helm for 25 years. In 1859 the company name was changed to Līhu`e Plantation. Under the auspices of Isenberg the original 3,000 acres of Līhu`e Plantation increased through the purchase of 300 acres at Ahukini in 1866; 17,000 acres purchased at Hanamā`ulu in 1872 which included a water source; and a lease of 30,000 acres at Wailua in 1878. In 1877 the Hanamā`ulu mill was added.

At the turn of the century many plantation workers were brought in to support the industry, Japanese, Portuguese, Korean and Puerto Rican and they were, in turn, supported with housing

and health benefits by the plantation. Housing areas were divided along ethnic lines and/or according to your job. Thus not only did Japanese, Filipino, or Okinawan Camps exist but there were also camps that were located in close proximity to areas because transportation was limited. Workers and families were located at ditches, reservoirs, landings, stables, powerhouses, etc. to help maintain those functions. The following table is a list of camps compiled from Lo’s (2006) website detailing oral accounts of the camps from former residents (1940s-1950s).

Table 2: List of Līhu`e Plantation camps or settlements in the vicinity of Hanamā`ulu and Kalapakī

Camp	Location	Ahupua`a
Up Camp	Behind Hanamā`ulu store	Hanamā`ulu
Middle Camp	Where Shell Station is located	Hanamā`ulu
Down Camp	In the Valley near Hanamā`ulu beach	Hanamā`ulu
McKeever’s Neighborhood Assistant Manager 1930-1945	Where Kaua`i Memorial Gardens & Funeral home is located where Maalo Rd. begins	Hanamā`ulu
Kapaia Camp	Near Immaculate Conception Church.	Hanamā`ulu
Up Kapaia Camp	Behind Immaculate Conception Church.	Hanamā`ulu
Pukaki Camp Filipino Camp of workers who weeded with hoes	Above McKeever’s to the right of Maalo Road	Hanamā`ulu
Camp 9 Filipino and Japanese ditchmen	A half mile off of Maalo road, three miles beyond McKeever’s.	Hanamā`ulu
Aii Camp (Camp 3) Japanese and Filipino reservoir men	Below Aii Reservoir	Hanamā`ulu
Lower Powerhouse	A dirt road to the left side of Maalo Road beyond Aii Camp and before Nagao’s place.	Wailua
Nagao’s Place A lone farmer who cared for the cane fields and raised vegetables	Above Aii Camp approaching Wailua Falls	Wailua
Peter Christian Camp Field Supervisor	At Wailua Falls beyond the south end of a bridge that once spanned the falls.	Wailua
Waterfalls Camp (Camp 6)	Above Wailua Falls, across the	Wailua

Hanamā`ulu ditch maintenance (10 miles)	old bridge and a mile up	
Upper Powerhouse Power plant man and grounds maintenance man.	Off of Maalo Road past Tanaka Reservoir. At the end of Powerhouse road.	Hanamā`ulu
Onuma's Place One house camp	One mile above Tanaka Reservoir	Hanamā`ulu
Chutaro Inouye's Place Ditchman	South of powerhouse	Hanamā`ulu
Fujii's Place Ditchman	1-1/2 miles above Inouye's Place	Hanamā`ulu
Stable Camp For oxen and horses	Above Waterfalls Camp	Hanamā`ulu
Okinawa Camp Reservoirmen	At Okinawa Reservoir, west of Kalepa Ridge Road and east of Okinawa Cane Road	Hanamā`ulu
Ahukini Camp Men supporting shipping operations	South side of Hanamā`ulu Bay	Hanamā`ulu
Līhu`e Camp	Above Līhu`e mill at the site of Līhu`e Town Tract "A"	Kalapakī
Kalapakī (Kilipaki) Camp	South of Līhu`e Mill	Kalapakī
Haleko Road European employees	Near Līhu`e Mill	Kalapakī

Initially in the second half of the 18th century Līhu`e Plantation transported all of their harvested cane to the mill via ox cart along numerous pathways and roads. The carts gave way to railways which operated on permanent and portable tracks in the 1890s (Condé and Best 1973:127). The plantation also built some permanent mainline tracks across the plantation. Portable tracks were moved around the plantation as needed to transport recently harvested cane from various fields to the main lines which then hauled the cane to the mill. In the annual report for 1957 the Harvesting and Transportation Department reported that, "All cane came off by portable track except 713 acres..." (Condé and Best 1973:167).

As the last Hawaiian sugar plantation still using trains to haul cane, Līhu`e Plantation began considering converting from railroad to trucks in 1956. "By 1957 the company was salvaging a part of their plantation railroad, which was being supplanted by roads laid out for the most part on or close to the old rail bed" (Saito & Campbell 1987). In 1958 the railroad and trucks were hauling cane to the mill, "278,933 tons vs 463,792 tons by trucking" (Condé and Best 1973: 167). By 1959 the transition was completed, all roads that crisscross the plantation were used to haul cane by one method or another. Various plans and maps show the evolution of these

roadways. Some were permanent roads but others changed with the different modes of transportation. The Hawaiian Government Survey map of 1878 (Figure 1) shows a landscape

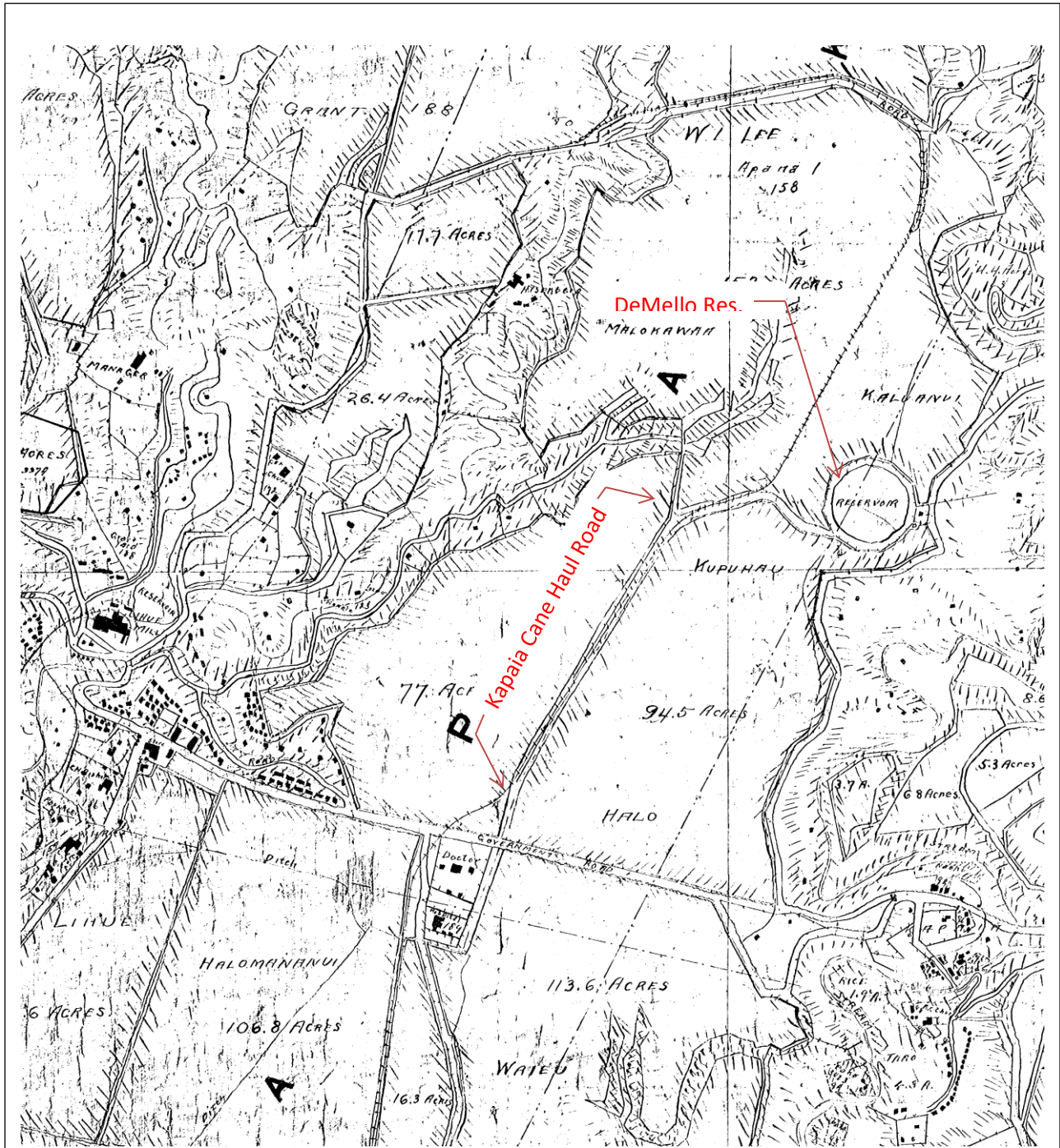


Figure 4: Portion of M.D. Monsarrat’s 1900 Map of Lihue Plantation showing Rail Line Situated over Kapaia Cane Haul Road.

untouched by sugar cultivation as compared to the 1900 Lihue Plantation by Monsarrat (Fig. 4) which is already depicting cane field sections. This map also shows the Kapaia Cane Haul road

going to the reservoir (Mella or De Mello reservoir) with train tracks on top of the road and continuing on in a northwesterly direction then turning to the south. A 1941 Lihue plantation Map (Figure 5) shows even further field subdivisions and the railway lines are now removed from the Kapaia Cane Haul Road and appear further south. The train no longer enters the plantation via the Ehiku/Kapaia route but traces a more northerly route from the mill. In the latter two maps, a road to the De Mello reservoir is present as the precursor to the Kapaia Cane Haul Road. The current alignment (Figure 6) of the Kapaia Cane Haul Road now veers to the north

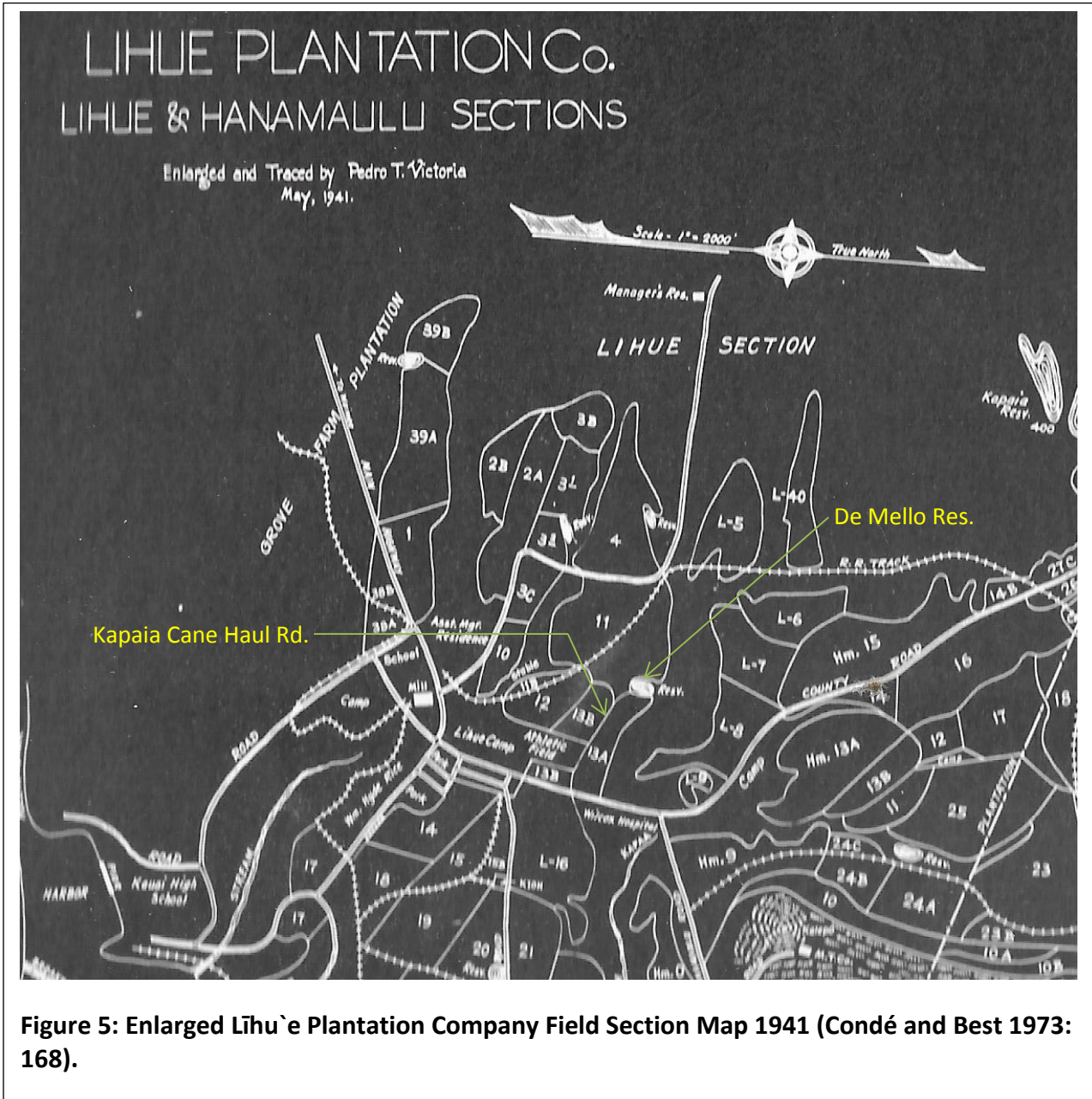


Figure 5: Enlarged Lihue Plantation Company Field Section Map 1941 (Condé and Best 1973: 168).

to meet Maalo Road. USGS Aerial photographs confirm that this change took place between 1951 (Fig. 7) and 1960 (Figure 8), more likely in 1959 at the time cane haul trucks were replaced trains.

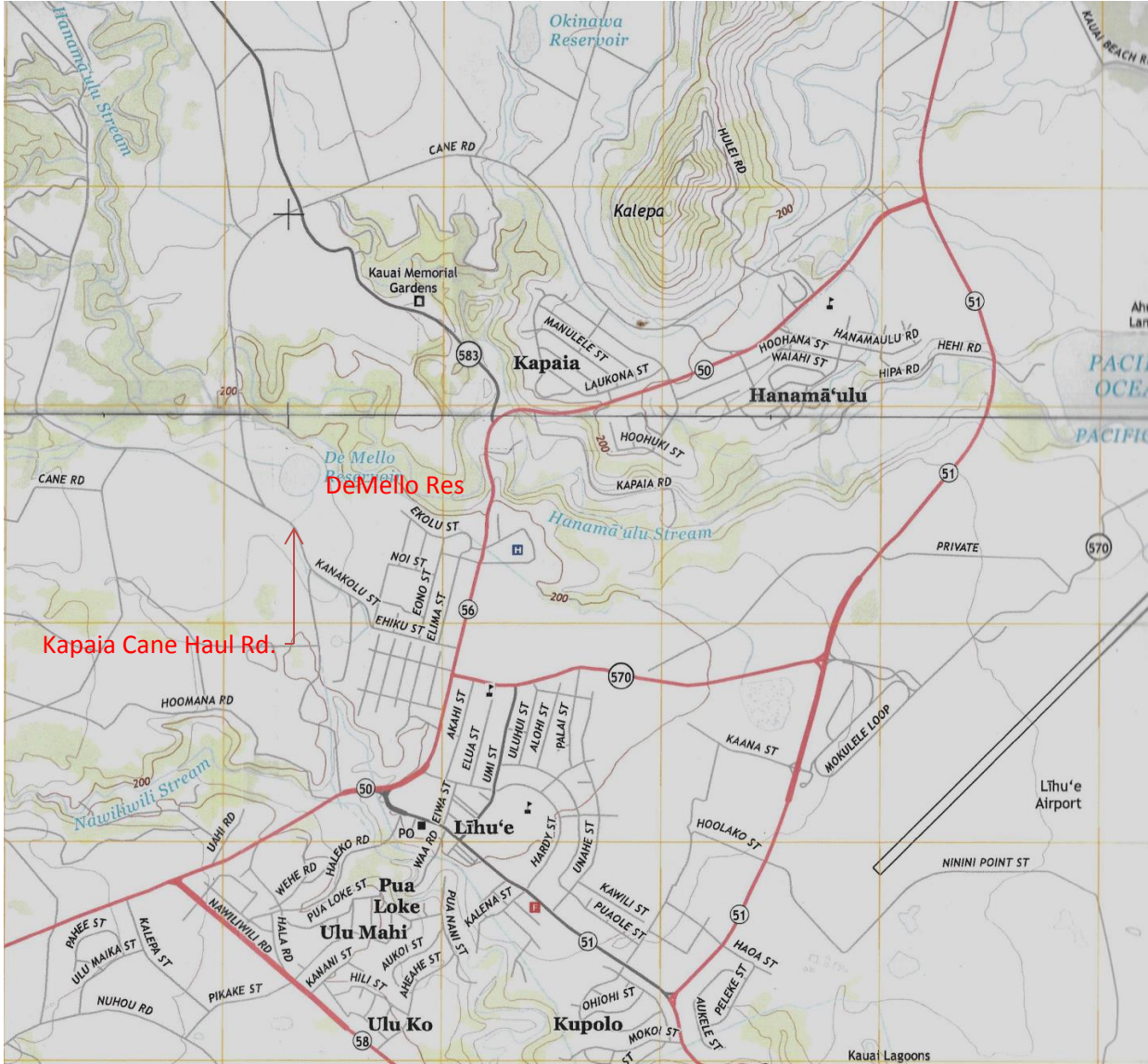


Figure 6: Portion USGS 7.5 Minute Series Topographic Maps of Līhu'e and Kapaia Quads, 2013.



Figure 7: 1951 USGS Aerial Photo Kapaia Cane Haul Road with Train Tracks.



Figure 8: 1960 USGS Aerial Photo showing Kapaia Cane Haul Road as a Truck Route.

Līhu`e Plantation developed an extensive irrigation system. Under engineers G. N. Wilcox and later, Joseph Hughes Moragne and others, the system grew to “51 miles of ditch and eighteen intakes” (Wilcox 1996:68-70). As the years passed and the plantation grew new agricultural technologies were adopted to increase yield. O’Day and Linde (2014) report that in recent years, “sugar cultivation became a highly mechanized process involving multiple steps using heavy equipment. Preparation of soils involved deep ripping that broke hard pan and lifted and shattered clay soils to 48 inches below surface. Fields were then disked to 36 inches to breakdown larger clods. A finish disk and drag rail was then used to 18 inches to further condition the soil before planting. Planting involved the use of D6 or D7 Caterpillar tractors fixed with plows to cut furrows up to 24 inches deep to channel irrigation water through the

fields. Aluminum flumes were installed in areas with slopes greater than 5 percent and catchment basins were excavated at the edge of fields to contain the runoff of open irrigation water. After two years of growth the cane was harvested with a Caterpillar D8 crawler and new roads were cut to allow access to haulers. The cane haulers weighed over 100 tons and severely compacted the soil during each harvest. This necessitated deep ripping prior to the planting of each crop starting a new two-year harvest cycle.”

The plantation introduced many factors that changed the landscape of Hanamā`ulu and Kalapakī; ditches and irrigation systems were built to water crops, the lands were cleared and subdivided to accommodate different transportation systems, and new industrial techniques were used to prepare the soil for planting. All of these factors altered the land and destroyed much of the evidence of settlement prior to the 1850s.

Modern Era

Today Ehiku Street (Figure 9) is bordered by Līhu`e Village Park, the Church of Jesus Christ of Latter Day Saints and the Isenberg Subdivision on the north. To the south is the subdivision of Līhu`e Town Tract “A” (formerly a portion of Līhu`e Camp as shown on Figure 6). The tax map does not show the new alignment of the Kapaia Cane Haul Road which is the extension of Ehiku Street. In the 50s and 60s Līhu`e Plantation, under its parent company American Factors (AmFac), “embraced the concept of urban renewal by radically redesigning the town core,” (Griffin, 2014:16). In 1946 houses in the Isenberg Tract were made available for sale to employees which signaled the end of plantation-provided housing and the beginning of the labor unions. In 1957 Līhu`e Plantation announced a home sales plan for Līhu`e Town Tract “A” (Garden Island 1957).

The Athletic Field that is shown on the Līhu`e Plantation Map (see Figure 5) appears to have been subdivided into the Church of Jesus Christ of Latter Day Saints, the Isenberg Recreation Center (park) and Līhu`e Village Park. The church grounds (2 acres), the 20-year old gym, and a few buildings were purchased from Līhu`e Plantation in 1955 with a dedication in 1969 (Gonsalves 2017). The gym was originally built in 1938 and used as a USO club during World War II; it accommodated basketball, volleyball, ping pong and pool games simultaneously (Soboleski 2017). During the plantation era the gym was called the “Isenberg Gymnasium” but it became the “LDS Gym” once it was purchased and it is known by that today. Isenberg Park changed hands shortly after 1973 when the county received a grant to purchase the property from AmFac (Garden Island 1973) and to construct a new park with baseball, football, and basketball accommodations as well as a neighborhood center. The park was completed and dedicated in January 1979 (Garden Island 1979). The Līhu`e Village Park area adjacent to the park and church was probably developed shortly after the file plan (subdivision) map was approved by the Bureau of Conveyances in 1988 (State Surveyor File Plan 1936).

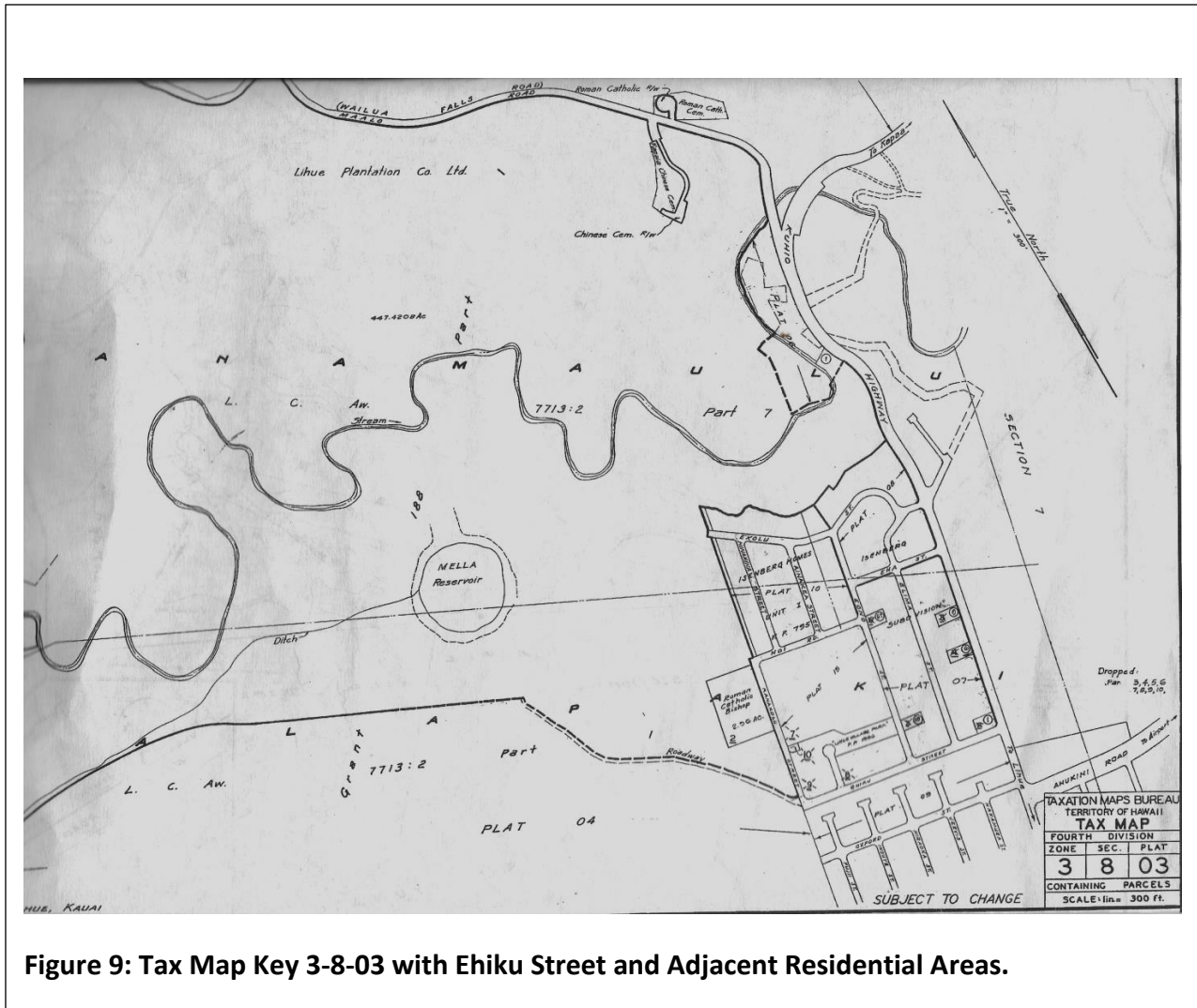


Figure 9: Tax Map Key 3-8-03 with Ehiku Street and Adjacent Residential Areas.

Immaculate Conception School is located just north of Ehiku Street as one travels west out of the subdivision. The former school faces Isenberg Park across Kanakola street. The school and convent opened its doors on Sept 4, 1951 (Garden Island 1951). The school closed in 1991 (Pamintuan, 2017). In 1997 it was operating once again as a school, this time as St. Francis School which closed 4 years later (Garden Island 2001). Today is still used as a convent with nonprofit organizations renting out space in the former classrooms and kitchen. These nonprofit organizations include, but are not limited to, Kaua'i Economic Opportunity, the Cancer Society, Lawai International and Happy Science.

PREVIOUS ARCHAEOLOGY

A search of the State Historic Preservation Division (SHPD), Kapolei, library indicated that no previous archaeological studies have been conducted within the proposed project area. In an effort to gather information about the settlement pattern within the *ahupua'a*, the

research identified archaeological studies conducted throughout the *ahupua'a*. A brief summary of these studies is provided below.

The earliest island-wide archaeological survey of Kaua'i Island was conducted in the early 1930s by Wendel Clark Bennett (1931), under the auspices of the Bernice Pauahi Bishop Museum. During this survey Bennett (1931:125) documented two archaeological sites in Hanamā'ulu Ahupua'a: Kalauokamanu Heiau (Bennett Site 102) and dune burials (Bennett Site 103). Kalauokamanu Heiau (Bennett Site 102) was originally recorded by Thrum (1906:40) as “[a] large walled heiau that “stood above the present mill, which was destroyed around 1855. The *heiau* was classified a *po'okanaka* or as being used in ceremonies associated with human sacrifice (Bennett 193:125). Ethel Damon (1931 cited in Belluomini *et al.* 2016) stated that “most of the stones from this enclosure were taken to make firm the foundation of the Hanamaulu sugar mill.” Bennett Site 103, consisted of numerous human burials located in the “sand dunes that run across the shore half way between Hanamaulu” and the Wailua River.

Paul H. Rosendahl (1990) conducted an Archaeological Field Inspection, with limited subsurface testing, for the Kalepa Radio Station and Kālepa Road improvements project. The project area was located in Hanamā'ulu Ahupua'a, Līhu'e, Kaua'i [TMK: (4) 3-8-002:005]. During the field work, a previously identified burial platform (State Site 50-30-11-1827) was relocated. No new archaeological sites were identified either on the ground surface or in subsurface contexts.

In 1990, the State Historic Preservation Division (McMahon 1990) conducted an Archaeological Field Inspection of potential locations for a new Kaua'i Judiciary Building in Nāwiliwili, Kalapakī, and Hanamā'ulu, Kaua'i. During the fieldwork, three previously identified historic properties were relocated: the Grove Farm Manager's house (State Sites: 50-30-11-9390) and two additional Plantation-Era residences (State Sites 50-30-11-9401 and -9402) were relocated. No additional archaeological sites were identified

Walker *et al.* (1991) conducted an Archaeological Inventory Survey of lands within Hanamā'ulu, Kalapakī, Nāwiliwili, and Wailua Ahupua'a, Līhu'e District, Island of Kaua'i [TMK: (4) 4-3-002, 4-3-003, and 4-3-009] for the Līhu'e /Puhi/Hanamā'ulu Master Plan. During the survey, ten archaeological sites were newly identified (State Sites 50-30-11-1838 through -1847). State Site 50-30-11-1838 was interpreted as pre-Contact cultural deposits; State Site 50-30-11-1839 was interpreted as a pre-Contact wall and terrace. A radiocarbon sample from State

Site 50-30-1838 yielded a radiocarbon date of AD 1170-1400 (Walker *et al.* 1991:72). State Site 50-30-11-1840 was interpreted as an historic retaining wall. State Site 50-30-1-1841 was interpreted as an historic road. State Site 50-30-11-1842 was interpreted as an historic wall). State Site 50-30-11-1843 was comprised of three historic features: a concrete foundation, road, and a concrete wall). State Site 50-30-11-1844 was an historic cemetery. State Site 50-30-11-1845 was an historic railroad bridge). State Site 50-30-11-1846 was an historic concrete bridge. State Site 50-30-11-1847 was interpreted as a possible pre-Contact agriculture site.

William Kikuchi (1992) conducted an Archaeological Reconnaissance Survey in advance of a proposed sand blasting project located in Hanamā'ulu, Līhu'e, Kaua'i. During the fieldwork, State Site 50-30-11-0818, interpreted as a post-Contact wall, was newly identified.

Kikuchi and Romoaldo (1992) conducted a survey and inventory of historic cemeteries on the island of Kaua'i. During the survey, seventeen cemeteries were documented within Līhu'e District, six of which were located in Hanamā'ulu Ahupua'a: State Site 50-30-08-B007 (inventoried but not surveyed); Kaua'i Memorial Gardens Cemetery, State Site 50-30-08-B008 (inventoried but not surveyed); Immaculate Conception Church Cemetery II, State Site 50-30-08-B009; Kapaia Chinese Cemetery, State Site 50-30-08-B010; Immaculate Conception Church Cemetery State Site 50-30-08, State Site 50-30-08-B011; and State Site 50-30-08-B019 (not located).

Akana (1994) conducted a program of Archaeological Monitoring during ground alterations during the construction of a rock wall revetment for burial site State Site 50-30-08-0746. During the excavations, fragmented human skeletal elements were observed eroding out of the dirt bank.

Franklin and Walker (1994) conducted an Archaeological Inventory Survey of 552.3 acres for the Molokoa Lands Project, located in Hanamā'ulu and Kalapakī Ahupua'a, Līhu'e District, Kauai. During the survey two previously identified sites were relocated: State Site 50-30-11-1842, previously identified by Walker *et al.* (1991), but newly interpreted as a boundary/agricultural wall; and State Site 50-30-08-9402, a historic building associated with radio station.

Dega and Powell (2003) conducted an Archaeological Monitoring program along Kūhiō Highway, during Phase I of the Kauaʻi Rural Fiber Optic Duct Lines Project, Kauaʻi Island. During archaeological monitoring of ten archaeological sites were identified: State Site 50-30-08-868, interpreted as traditional native Hawaiian and historic burials; -871 (traditional Hawaiian and historic burials), State Site 50-30-08-872, interpreted as traditional native Hawaiian burials), State Site 50-30-08-884, a cultural layer containing traditional artifacts, charcoal, historic artifacts, and railroad bedding; State Site 50-30-08-885, interpreted as an historic irrigation ditch; State Site 50-30-08-886 (pre-Contact hearth, historic ditch, traditional native Hawaiian burial; State Site 50-30-08-887, (traditional cultural layer; State Site 50-30-08-1711, interpreted as a pre-Contact hearth; State Site 50-30-08-1848, pre-Contact post molds and hearth; and State Site 50-30-08-1849, interpreted as a pre-Contact cultural layer). Of these, only State Site 50-30-08-885 is located in Hanamāʻulu Ahupuaʻa.

Dye and Jourdane (2006) an Archaeological Inventory Survey-level investigation of a portion of TMK: (4)3-8-002:005, in Hanamāʻulu, Līhuʻe, Kauaʻi Island, Hawaiʻi, in advance of the proposed Cingular Wireless Kālepa Grove Farm Cell Site. No archaeological sites were identified.

Hammatt (2006) conducted an archaeological literature review and field inspection of 23.5-acres in Kalapakī and Hanamāʻulu Ahupuaʻa, Līhuʻe District, Kauaʻi Island, in advance of the proposed expansion of the existing Wal-Mart store. The literature review sugarcane cultivation was the dominant land use within the project area and surrounding lands throughout the twentieth century until the closing of Lihue Plantation in the 1990s. No surface archaeological sites were observed during the fieldwork.

Kamai and Hammatt (2015) conducted an archaeological literature review and field inspection for the proposed Līhuʻe Hanamāʻulu New Mauka Road and a Future Potential Mauka Road.” The proposed roadway corridor is approximately 16.8-km and will be located in Hanamāʻulu Ahupuaʻa, Līhuʻe District, Kauaʻi Island [TMK: (4) 3-4-005; 3-8-002; 3-4-007; 3-8-003; and 3-8-005). The findings identified historic properties including, Plantation-Era including ditches, culverts, and an historic cemetery located along both sides of the existing portions of cane haul roads.

Morriss *et al.* (2014) conducted an Archaeological Inventory Survey in advance of the proposed Municipal Solid Waste Landfill and a Resource Recovery Park project in Hanamā'ulu and Wailua Ahupua'a, Līhu'e District, Kaua'i [TMK: (4) 3-9-002:020 and 3-8-002:001]. During the survey, thirty-two Plantation-Era features related to water control, transportation, and agriculture were identified. "Following the Morriss and Hammatt (2014) investigation, the project area was expanded to include several proposed access roads (Potential Access Roads A through E). As a result, an addendum AIS was required for the undocumented areas of the revised project area. In 2014, CSH conducted the addendum AIS for the proposed access roads" Belluomini, S.A., D.W. Shideler, and H.H. Hammatt (2016).

Hammatt and Shideler (2015) conducted an Archaeological Inventory Surface Survey in advance of the Kapaia Solar Photovoltaic and Battery Energy Storage Project, Hanamā'ulu Ahupua'a, Līhu'e District, Kaua'i [TMK: (4) 3-8-002:002 por.]. During the survey, one archaeological site, consisting of a Plantation-Era cane haul road and a remnant ditch, was newly identified. At the time Hammatt and Shideler (2015) was published, the State Historic Preservation Division Site Number designation had not been assigned.

Belluomini (2016) conducted an Archaeological Inventory Survey in advance of the Kapaia Solar Photovoltaic and Battery Energy Storage project. The project area consisted of 46.5 acres of land Hanamā'ulu Ahupua'a, Līhu'e District, Kaua'i, [TMK: (4) 3-8-002:002 por. and 3-8-003:001 por.]. During the survey, State Site 50-30-08-2111, a Plantation-Era irrigation ditch system, was identified.

In summary, Plantation-era sites have been documented in the environs of the project area, a causation of intensive land use during historic times. No significant historic properties dating to prehistoric times are present, this also a possible cause of massive landscape changes that occurred during Historic-era cultivation practices. These patterns align with the project area: cane haul road and associated historic culverts and such, the latter which will not be impacted by the current project.

The project area is dominated by Historic-era activities (plantation) that may have erased some earlier settlement of the region. The focus of the study, the Kapaia Cane Haul Road was originally constructed as a conduit to the DeMello Reservoir, with a railway on the

same path. This road was late converted into a truck road. While other plantation features occur in the area, such as culverts, none will be adversely affected by the propose project.

ARCHAEOLOGICAL FIELD INSPECTION

Field inspection work was conducted by SCS within the project area corridor and environs. This section is divided into landcape and archaeological survey. The fieldwork was completed in December, 2017 and January, 2018.

Vegetation

Vegetation observed in the project area, consisting of species 10 meters (m) on either flank of the project area, consisted of multiple species. None of these species will be impacted by the current project.

Native

Hala, Hau, Kamani, Koa, Kou, Kukui, Lolu Palm, Milo, Mokihana, Ti

Non-Native

Banana, Brazillian Peppertree, Hale Koa, Hibicus, Java Plum, Mango, Maina Loa Vine, Plumeria, Royal Palm, Various Grasses and Weeds

Archaeological Inspection

SCS conducted an inspection survey in December 2017 and January of 2018 along the proposed 18-inch water pipeline route on the Kapaia Cane Haul Road. The object of the inspection was to identify the presence/absence of archaeological features that occur within the area of potential impact.

The pipeline will be placed under the east and north side of Kapaia Cane Haul Road from Ma'alo Road to the intersection of Ehiku Road and Kuhio Highway in Lihue. SCS surveyed 15 meters on either side of the cane haul road, as well as Ehiku Street.

Two historic properties were encountered during the survey:

The Kapaia Cane Haul Road

Kapaia Cane Haul Road is a surface road built in 1959 to provide a direct route for trucks hauling harvested cane to Lihue Mill from the northern cane fields of Lihue Plantation.

Irrigation ditch

Ditch that provides water to De Mello Reservoir and distributes that water to fields to the east and south of the reservoir. The ditch runs along the north and south side of the cane haul road and contains several water control features. At this time it is not known if the ditch has a name.

SCS observed numerous historic ditch features at six locations along the ditch in the project area. All the features are related to the plantation era irrigation system. None of the features appeared to function as originally designed.

All the features mentioned are south of Hanamaulu Valley which bisects the project area. No potential sites or features were observed between the north side of the valley and Ma'alo Road.

Below is a list of features described in the order they were identified as the survey proceeded from Kuhio Highway west on Ehiku Street to the Grove Farm property, then north toward Ma'alo Road. All features are present on Grove Farm property. No GPS was available at the time of the survey so the locations have not been mapped. They are categorized by a location number. Each location will have 1 or more features.

Irrigation Ditch Features

Location 1 feature was a culvert that allowed water to move from the west side of the plantation toward the east under a cane haul road and was constructed of basalt rock. This feature is on the south side of Kaipia Cane Haul Road within the area of potential impact, but well away from the planned construction area and should not be impacted by the pipeline.



**Figure 1: Culvert under a plantation road to Lihue Plantation Mill
View to the east toward Kuhio Highway**

Location 2 Feature

This feature is a basalt-lined section of irrigation ditch on the south side of the Kapaia Cane Haul Road. The ditch's primary function appears to have been to move water from the De Mello Reservoir to the fields to the east and perhaps to the Lihue Mill. This ditch connects with the culvert described above, 50 meters to the west.

This section is on south side of Kapaia Cane Haul Road within the area of potential impact, but well away from the planned construction area and should not be impacted by the pipeline.



**Figure 2: Basalt-lined ditch with slot for water control battens.
View to the south**

Location 3 Features

Metal culvert beneath the Kapaia Cane Haul Road directing water south from the north side of the road and east toward feature # 2. The north side of this feature is within the potential area of impact but the project has designed an elevated pipe system to avoid impacting the culvert.



Figure 3: Metal Culvert, North Side of Kapaia Cane Haul Road

Southside of the metal culvert under Kapaia Cane Haul Road. While in the area of potential impact the south side section is well away from the construction area and should not be impacted.



Figure 4: Southside of metal culvert
Note plastic pipe system for irrigation water that now directs irrigation water instead of the original open ditch system.

Ditch, irrigation gates, possible railroad bridge foundation, sieve machinery for removing debris from ditch water and a “1947” date inscribed on concrete column. These structures are on the southwest side Kapaia Cane Haul Road and well away from the construction area. They should not be impacted by the construction.



Figure 5: Water control gate on west side of the ditch.



Figure 6: Railroad bridge foundation



Figure 7: Shed with ditchwater screening machinery



Figure 8: "1947" inscription

Box culvert under Kapaia Cane Haul Road. This is within the area of potential impact. The project has designed the pipeline to be elevated above the culvert on this side of the road. Should be minimal impact to the culvert.



Figure 9: View to West

A number of gates and ditches, a box culvert and a bridge near the De Mello Reservoir. Majority of the features are just out of the zone of potential impact.



Figure 10: Box culvert on east side of Kapaia Cane Haul Road.

The project has designed the pipe to be elevated above the culvert on this side of the road. Should be minimal impact to the culvert.

Bridge at intersecting ditches. West side of Kapaia Cane Haul Road and well away from the construction area. This should not be impacted by the construction



Figure 11: View to the west.

Just east of and outside of the area of potential impact, but part of the ditch system, this feature is well away from the construction area and should not be impacted (Figure 12).



Figure 12: Water control gate for irrigation water from De Mello Reservoir.

No plantation era features were observed along the project corridor north of the De Mello Reservoir to Maalo Road.

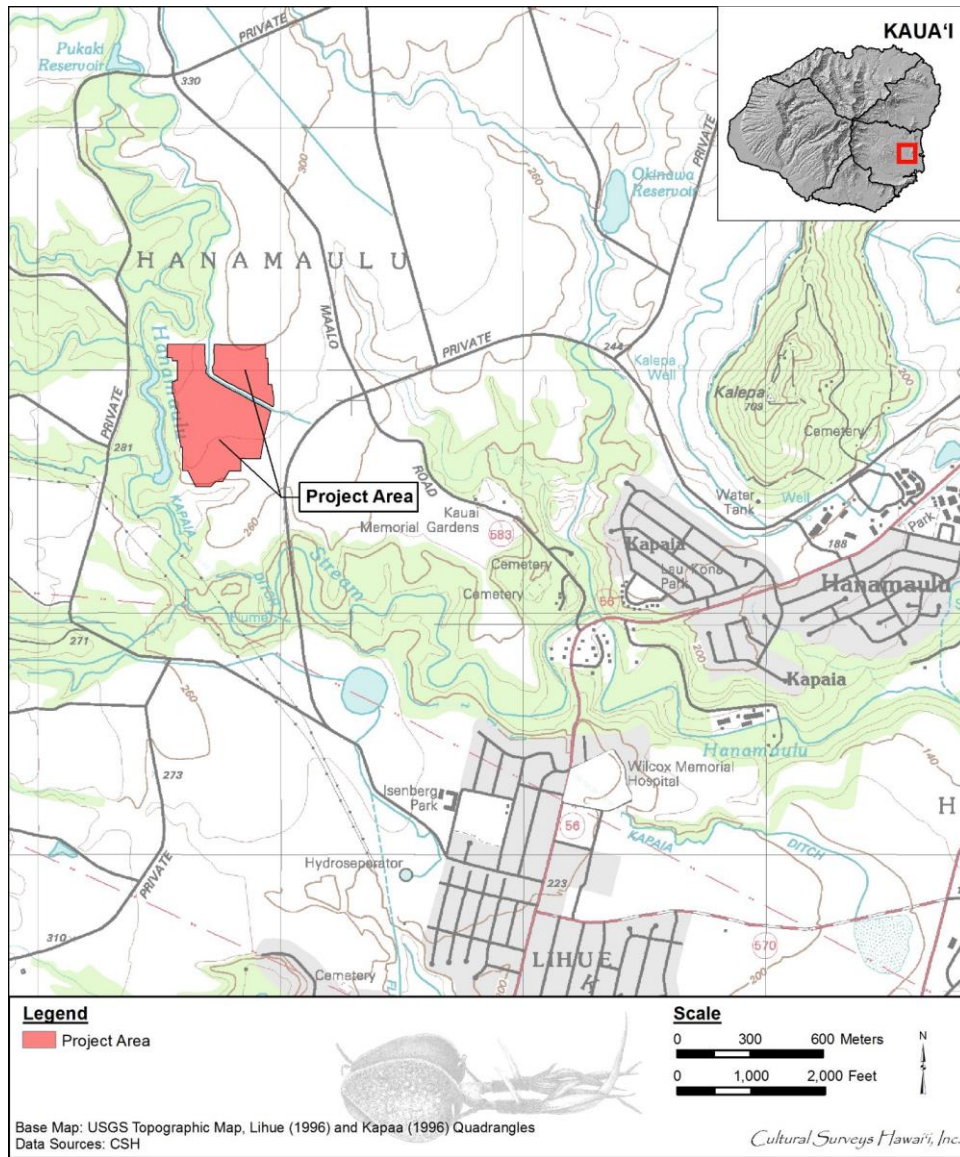
Subsurface Testing along the Kapaia Cane Haul Road 18 inch Waterline

Two studies, on two separate properties at the north end of the proposed pipeline included trenching and they found no cultural materials, either pre-Contact or Post Contact, of significance.

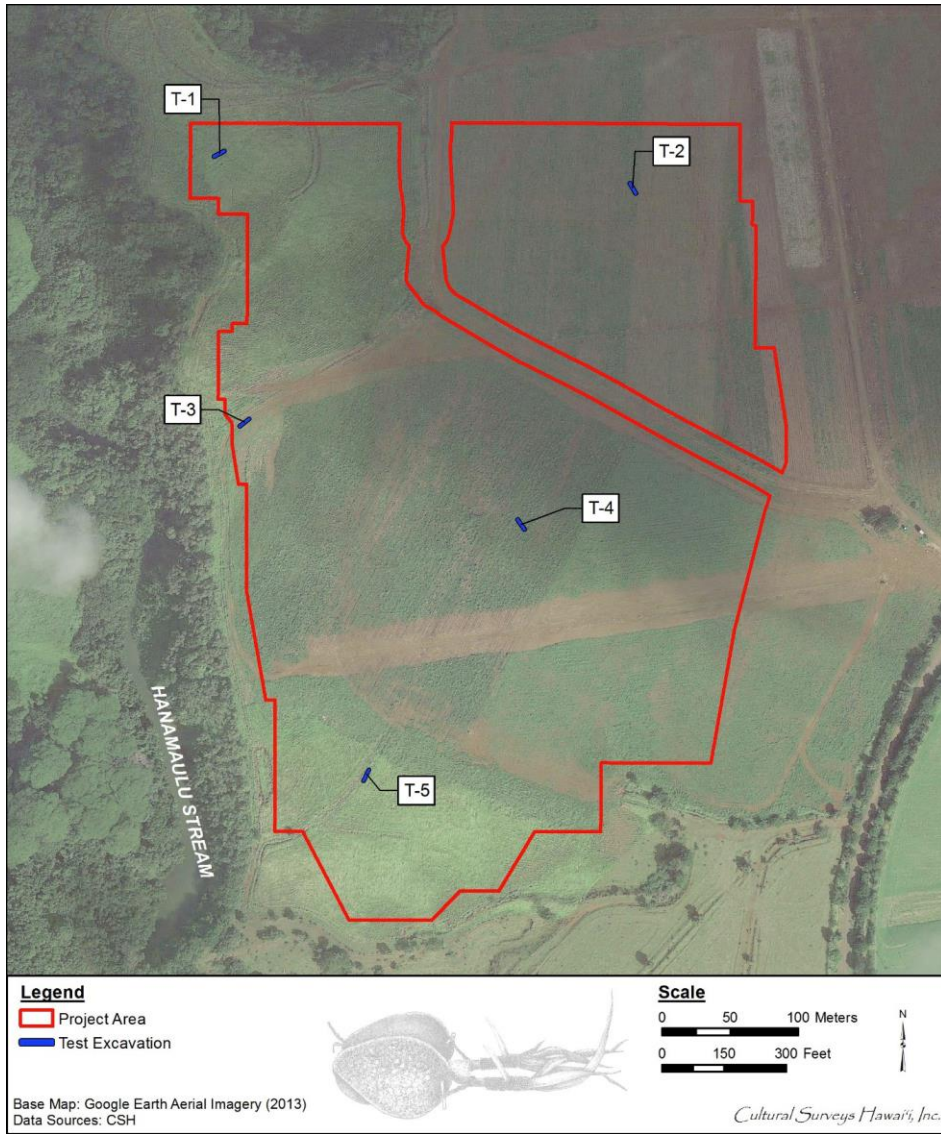
CSH produced an AIS for Solar City in 2016. The 46.5 acre parcel is located approximately 500 feet northwest of the Kapaia Cane Haul Road near the intersection of the Cane Haul Road and Ma'alo Road. This is one end of the Grove Farm/Dept. of Water 18" waterline project. CSH conducted testing at six locations on the parcel. No subsurface cultural materials were observed.

A single surface historic site SHIP 5-30-08-2311 was located. This is an irrigation ditch that ran diagonally across the property in a NW to SE direction; indicated in the map by the blue line dividing the project area shown in pink.

Location of Solar City Project Parcel near the intersection of Ma'alo Rd. and Kapaia Cane Haul Road (labeled private).



Solar City trench locations with Kapaia Cane Haul Road in the lower right hand corner.

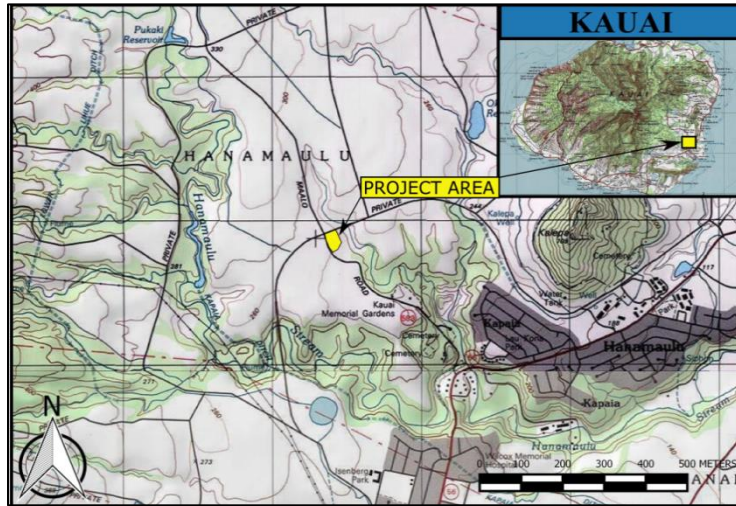


Also in 2016 SCS produced an Archaeological Assessment for a County of Kaua'i Adolescent Drug Treatment Facility on a 5-acre parcel at the south east corner of the intersection of Ma'alo Rd. and Kapaia Cane Haul Road. These results are quoted from the report (Wasson and Dega 2015):

“... Full pedestrian survey and the excavation of eight representative trenches (ST-1 through ST-8) were completed on the 5 acre parcel. The project area consists of a single, undeveloped lot of former sugar cane field land.”

“No archaeological sites were identified during fieldwork. As such, this report is being written as an Archaeological Assessment, an abbreviated Inventory Survey report. Subsurface testing predominantly revealed previously disturbed soil layers from many years of cane cultivation, as well as imported coral and sand mixed fill throughout. The coral and sand were most likely used for soil preparation and mixed by mechanical tillers during past cane production years. No further archaeological work is recommended for this parcel.”

Project area



Project area at the intersection of Cane Haul Rd. (mis-labeled as Ehiku St) and State Road 583 or Ma'alo Road.

SCS Subsurface testing results.

“Eight stratigraphic trenches were mechanically excavated in the project area (see Figure 6). No traditional or historic-period cultural deposits, artifacts, midden, or skeletal materials were identified during the testing. Stratigraphy consisted of Lihue silty clay (LhB and LhC) as well as Lihue gravelly silty clay (LIB) (see Foote *et al.* 1972). Sugarcane has been the preferred crop for this location and because of this, the soil has been heavily worked through time. This reoccurring soil preparation year upon year for sugarcane production, has resulted in mixed strata. The stratigraphic sequence also showed the inclusion of non-naturally occurring soils, such as sand and coral, being imported to this location for soil health. These occurred in three of the trenches. The following provides trench descriptions and stratigraphic profiles and photographs for all excavated trenches (Figures through 7 through 25). Trench locations are shown below.”



Conclusions

Considering the results from the two previous studies, as well as a survey of the current project area, SCS recommends no subsurface testing or monitoring along the portion of the project that stretches from the intersection of Ma'alo Rd and the Cane Haul Road to the edge of Hanamaulu Stream Valley.

However, SCS does recommend full-time monitoring of the trenching along the section of the project that begins on the north side of Hanamaulu Valley, continuing across the valley and along the old railroad right of way down Ehiku St. to Kuhio Highway. There may be an opportunity to identify and date *loʻi* soils in Hanamaulu Valley and recover historic artifacts along the old railroad right of way.

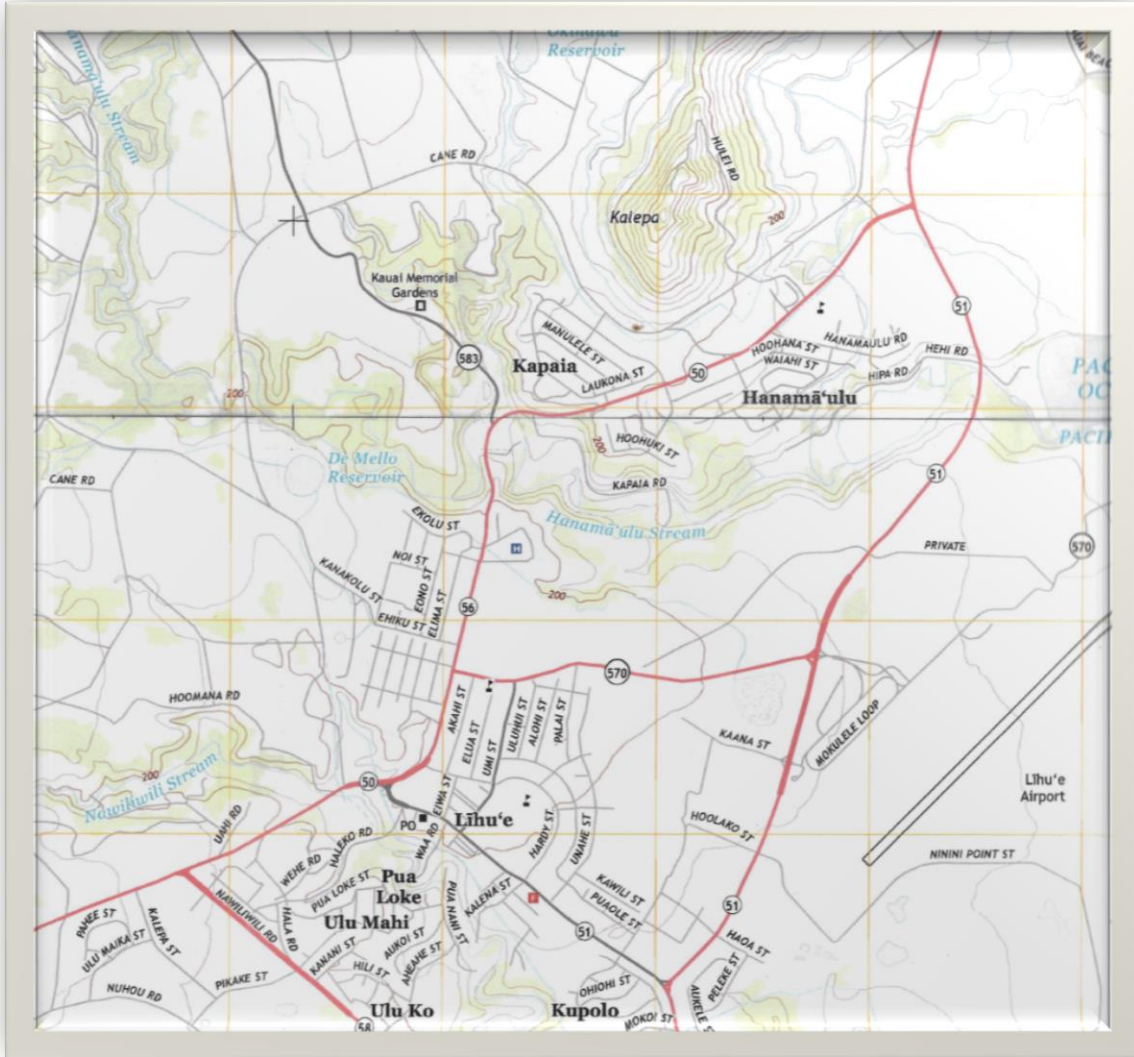
Kapaia Cane Haul Road History and Summation

The 18-inch water line project will connect two existing waterlines. It will begin at the intersection of Ma'alo Road and Kapaia Cane Haul Road and go to the intersection of Ehiku Street and Kuhio Highway a distance of approximately two miles. The route is along the cane haul road until it reaches an intersection with Ehiku Street just west of De Mello Reservoir where it will continue east along Ehiku Street to Kuhio Highway.

SHPD has asked SCS to clarify the history of this route regarding the age of the two roads involved. SCS has obtained two aerial photos of the area involved. The first is a photo from 1951. A prominent feature from this view is the De Mello Reservoir, the light grey circle in the center of the photo. This will be a reference point for this discussion.

USGS 2013 Kapaa and Lihue quads.

Showing: Cane Rd. or Kapaia Cane Haul Road, Ehiku Street, De Mello Reservoir and Ma'alo Rd/State Rd. 583. Also shown Hanamaulu and Nawiliwili Valleys.



1951

At this date only Ehiku Street had been constructed, there was no Kapaia Cane Haul Road. Ehiku Street functioned not only as a street but also provided railway access to LP cane fields to the west. The De Mello reservoir is clearly shown as the perfect circle in the center of the photo.

The railroad is visible on a 1900 map by Monsarrat (Map of the Lihue Plantation, Register Maps 2141 and 2142. Property Hawaii Territory Survey). This maps shows the railroad track with an irrigation ditch running parallel with it. A copy of the map is in the draft report (Fig. 4). No road is shown and there are no subdivisions.



Kapaia Cane Haul Road Project area, 1951

1960

During the mid-1950's Lihue Plantation began making plans to convert cane transportation from railroad to trucks. This conversion was completed by 1960. On the aerial photo below that the Kapaia Cane Haul Road shows up clearly as an arc from its intersection with Ma'alo Road, continuing across the stream bed of Hanamaulu Stream and along the northwest side of de Mellow reservoir until it connects with Ehiku Street. It then veers off of Ehiku Street and heads toward Nawiliwili Stream and Lihue Mill.

At this time the two subdivisions bordering Ehiku Street are pretty well built out. Houses, churches, a hospital and business now occupy former cane land.



Kapaia Cane Haul Road Project area, 1960.

Summation

The Kapaia Cane Haul Road qualifies as a historic site with two components. One, a cane haul railway of the early 1900's vintage. Two, a cane haul road of the mid to late twentieth century era.

Recommendation

SCS recommends that full time monitoring occur on the railway portion of the Kapaia Cane Haul Road. SCS anticipates historic artifacts may be recovered during trenching just northwest of De Mello Reservoir.

Furthermore, SCS recommends monitoring during trenching of the portion of the waterline that crosses the Hanamaulu Stream area. SCS anticipates pre-Contact *lo`i* soils that may be observed in this area.

SCS recommends no monitoring for the area from the Ma'alo Road intersection to the edge of Hanamaulu Stream Valley. Recent subsurface testing on two AIS projects (Kapaia Solar City and the County of Kaua'i Adolescent Drug Treatment Facility) in the area at the intersection of Ma'alo Road and Kapaia Cane Haul Road did not yield cultural material. Overall, an AIS of the project area is not warranted as none of the feature noted above will be adversely impacted by this project.

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